TAPR Regional Networking Special Interest Group Archive, January 1995 through December 1995

January 1995 through December 1995

TAPR's forum for amateur packet-radio networking, including regional network case studies, interconnection of regional networks, packet-to-Internet gateways, network planning, addressing, routing, and operational experience.

This volume contains 12 original monthly files and 1,672 messages, arranged chronologically. The PDF is a readable access copy: MIME transfer encodings are decoded, HTML bodies are converted to plain text, and non-text attachments are represented by descriptive notes. The raw source text is supplied separately with the Internet Archive item.

Month	Messages	Original source file
1995-01	271	netsig.9501
1995-02	104	netsig.9502
1995-03	130	netsig.9503
1995-04	72	netsig.9504
1995-05	138	netsig.9505
1995-06	63	netsig.9506
1995-07	423	netsig.9507
1995-08	118	netsig.9508
1995-09	46	netsig.9509
1995-10	187	netsig.9510
1995-11	62	netsig.9511
1995-12	58	netsig.9512

January 1995

Original source file: netsig.9501
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9501

1. NETSIG Message Traffic Help

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
Date: Tue, 03 Jan 1995 09:50 EST
To: netsig@tapr.org
Message-ID: <m0rPAoJ-000KzTC@mailgate.wpafb.af.mil>
Rendered body type: text/plain

Form: Memo
Text: (16 lines follow)
NETSIG Folks!
I am glad to see this SIG perk up recently, but the increased mail is
getting a bit crazy... Is there any way to have this list send its messages
in a DIGEST format? Other lists I read (WIN3-L, etc) have an option to "SET
DIGEST" and get all the list messages in one huge email rather than several
individual messages. I really prefer this since if it stops the barrage of
email messages popular lists can cause.

If anyone knows the magic commands, please let me know. I read the help
file I requested, but couldn't find anything on this.

Thanks!

73

Andrew Lynch, N8VEM
Use Proportional Font: true
Attachment Count: 0

2. Winsock TCP/IP and Packet Radio dreams

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
Date: Tue, 03 Jan 1995 10:51 EST
To: netsig@tapr.org
Message-ID: <m0rPBXo-000L2aC@mailgate.wpafb.af.mil>
Rendered body type: text/plain

Form: Memo
Text: (21 lines follow)
NETSIG Gurus:

I would love to be able to run Winsock TCP/IP applications over packet
radio. Of course, this means there must be a driver to connect the Winsock
applications to a TNC. ETHRAX25 allows such a connection, but requires a
KISS compatible TNC on a serial port. I would like to find a similar
program for the BAYCOM style modems. If you know of one, please contact me
or post to this list.

I am currently running KA9Q NOS (G1BEE version) in DOS with a BAYCOM driver
and modem. I would really like to find a windows version of this system if
possible.

73

Andrew Lynch, N8VEM

PS, please do not suggest that I get a KISS compatible TNC, since I am
already planning to get one (eventually--several months at least with the
rate my personal situation is going). In the meantime, however, a BAYCOM
compatible converted PMP is all I have.
Use Proportional Font: true
Attachment Count: 0

3. X1J Curious behaviour

From: n3fih@omni.voicenet.com (Terry Ryan)
Date: Tue, 3 Jan 1995 11:39:54 -0500
To: netsig@tapr.org
Message-ID: <9501031640.AA01351@omni.voicenet.com>
Rendered body type: text/plain

One of our X1J-equipped nodes has developed a problem: when trying to
connect to it's alias, it responds with the greeting message instead of
the unnumbered acknowledge. All routing through this node using netrom
has stopped. I haven't changed anything on the setup of the node (yeah,
I know, they all say that) except for playing around with the IP routing.

Connects to the call/sid connect OK, first time every time. Attempts
to connect to the alias get an immediate response from the node, but
unfortunatly the wrong response.

The other curious thing I've noticed is ping-ing problems. I've set up the
3 node stack with 1 (external) IP address using the internal pseudo-address
approach documented in the X1J manual. Any time someone pings someone
routed to a different freq. (thru the stack) they get a response, and
another, and another continuously for several minutes, at a rate of about
one response every 15-20 seconds. These spurious responses seem to come
from the node itself, not the ping-er or the ping-ee.

Any help on either problem would be very much appreciated.

Terry Ryan, n3fih

4. Re: [NETSIG:622] NETSIG Message Traffic Help

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 3 Jan 1995 14:07:37 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501032007.OAA19853@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Yes, you can set any of the TAPR lists for digest mode.

Send e-mail to 'listserv@tapr.org'
and in the message body include the set command. Here is the definition.

        'set <list> mail digest': your message is not sent back to you.
                New messages are not sent to you as they arrive, but are
                accumulated into digests that are periodically sent to you.

So,

set netsig mail digest

should work.

Cheers - Greg

According to Andrew J. Lynch:
>
> Form: Memo
> Text: (16 lines follow)
> NETSIG Folks!
> I am glad to see this SIG perk up recently, but the increased mail is
> getting a bit crazy... Is there any way to have this list send its messages
> in a DIGEST format? Other lists I read (WIN3-L, etc) have an option to "SET
> DIGEST" and get all the list messages in one huge email rather than several
> individual messages. I really prefer this since if it stops the barrage of
> email messages popular lists can cause.
>
> If anyone knows the magic commands, please let me know. I read the help
> file I requested, but couldn't find anything on this.
>
> Thanks!
>
> 73
>
> Andrew Lynch, N8VEM
> Use Proportional Font: true
> Attachment Count: 0
>

5. Re: [NETSIG:624] X1J Curious behaviour

From: Klarsen <k5di@acca.nmsu.edu>
Date: Tue, 3 Jan 1995 14:00:24 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950103135304.16867A-100000@kazak>
Rendered body type: text/plain

On Tue, 3 Jan 1995, Terry Ryan wrote:

> One of our X1J-equipped nodes has developed a problem: when trying to
> connect to it's alias, it responds with the greeting message instead of
> the unnumbered acknowledge. All routing through this node using netrom
> has stopped. I haven't changed anything on the setup of the node (yeah,
> I know, they all say that) except for playing around with the IP routing.
> Connects to the call/sid connect OK, first time every time. Attempts

> to connect to the alias get an immediate response from the node, but
> unfortunatly the wrong response.

        Your question makes no sense. You say the netrom part of the node
has ceased to function. How can you expect the alias to work if netrom is
dead? I have never heard of netrom stopping except for major problem like
bank switching stoppage.

>
> The other curious thing I've noticed is ping-ing problems. I've set up the
> 3 node stack with 1 (external) IP address using the internal pseudo-address
> approach documented in the X1J manual. Any time someone pings someone
> routed to a different freq. (thru the stack) they get a response, and
> another, and another continuously for several minutes, at a rate of about
> one response every 15-20 seconds. These spurious responses seem to come
> from the node itself, not the ping-er or the ping-ee.
>
        I have never stacked X1J nodes so can't address your ping
problems. I assume they all have ip broadcast == 255.255.255.255 and like
that.

> Any help on either problem would be very much appreciated.
>
> Terry Ryan, n3fih
>
>
        Terry it does sound to me like one or more tnc's is dead. Or your
harness is set not right. Or a few dozen other things...hi

-k5di

6. Re: [NETSIG:626] Re: X1J Curious behaviour

From: n3fih@omni.voicenet.com (Terry Ryan)
Date: Tue, 3 Jan 1995 16:42:38 -0500
To: netsig@tapr.org
Message-ID: <9501032142.AA07126@omni.voicenet.com>
Rendered body type: text/plain

>
>
>On Tue, 3 Jan 1995, Terry Ryan wrote:
>
>> One of our X1J-equipped nodes has developed a problem: when trying to
>> connect to it's alias, it responds with the greeting message instead of
>> the unnumbered acknowledge. All routing through this node using netrom
>> has stopped. I haven't changed anything on the setup of the node (yeah,

>   Your question makes no sense. You say the netrom part of the node
>has ceased to function. How can you expect the alias to work if netrom is
>dead? I have never heard of netrom stopping except for major problem like
>bank switching stoppage.

Let me rephrase... Users can no longer connect to the node using the netrom
alias. BBSs using
the node, who have, I assume, scripted to connect by alias, can no longer
forward thru it. One
CAN connect by using the call/sid, however.

Watching this on the trace screen, I noticed that when connecting to the
call/sid, the
first response from the node is unnumbered ack. However, when attempting to
connect to the alias, it responds with the 'welcome to' message. I assume
because the
state tables dictating this procedure want an unnumbered ack, they do not
recognize
the node responding, and hence do not establish a connection.

Terry Ryan

7. 9.6 Mod For IC-IR7000?

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
Date: 3 Jan 1995 15:31:53 -0600
To: "Post Netsig TAPR" <netsig@tapr.org>
Cc: "Mike Curtis" <puffin!wd6ehr.ampr.org!wd6ehr>

Message-ID: <199501032200.QAA01438@ATK.COM>
Rendered body type: text/plain

```
Subject:                                Time:3:18 PM
  OFFICE MEMO          9.6 Mod For IC-IR7000?                Date:1/3/95
I'd like to set up my Icom IC-R7000 receiver to monitor 9600 Bd packet (with
G3RUH-type modem).  Anyone worked out the AF connection and tried it out?
Looking at the schematic it appears that the connection should be to the
output of the FM-N FM detector feeding Q13/Q14, e.g., the junction of
R97/R99.  Any suggestions before I start "hacking" will be appreciated!

73/Rick W0TN
```

8. Re: [NETSIG:627] Re: X1J Curious behaviour

From: mfoster@amoco.com (Michael H. Foster)
Date: Tue, 3 Jan 95 15:59:48 CST
To: netsig@tapr.org
Message-ID: <199501032159.AA21936@interlock.amoco.com>
Rendered body type: text/plain

Terry, did you put the patch into your X1J nodes?

We noticed that when folks tried to use the alias when the buffers were low, the node rejected the connections with a "node busy".

Mike

9. nos/rose L2 clash

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
Date: Tue, 03 Jan 95 17:04:49 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <14185@k0vm.ampr.org>
Rendered body type: text/plain

We have recently added a rose switch into our local network consisting jnos and x1j.

  During the check of operations I have noticed what I believe to be ax25 level 2 inefficency between jnos and rose. (jnos110h,rose 3.5a)

  Basically, when jnos is receiving packets from rose (rose maxframes = 6), jnos generates, and queues up a 'RR' frame for each frame in the one transmission (frames 0-5). At the end of the rose transmission, jnos transmits all of the queued up 'RR' frames (RR1-6). Rose upon seeing the first RR1, responds by resending frames 1-5.

  1) The obvious quick fix is to set rose maxframes to 1. which I have done.
  2) Shouldn't rose wait for ALL RR frames before it makes a desicion on which frames to resend?
  3) Shouldn't jnos wait for the end of transmission before it generates and sends one RR frame for the last correct frame received ?
  4) Are either or both of the these responses non-complient with the ax25 protocol specification?

 (jnos does not appear to have the equivalent for the TNC2 RESptime ?, Rose T1 timer does not appear to be functional ?)

  Is netsig the proper place to ask about dissimilar networks interoperablity ? ax25 complience ?

```
-73- AL  -----------+-------------------------------------+
Al Groff, K0VM      |      bbs : k0vm@wa0rjt.ia.usa.noam  |
Cedar Rapids, Ia    |   packet : k0vm@k0vm.ampr.org       |
--------------------+ internet : al@ia.net   -------------+
```

10. Re: [NETSIG:630] nos/rose L2 clash

From: tmoulton@ram.net
Date: Wed, 04 Jan 95 07:05:02 EST
To: netsig@tapr.org
Message-ID: <06083.15021573@RAMail>
Rendered body type: text/plain

```
>  We have recently added a rose switch into our local network consisting
>jnos and x1j.
>
>  During the check of operations I have noticed what I believe to be ax25
>level 2 inefficency between jnos and rose. (jnos110h,rose 3.5a)
>
>  Basically, when jnos is receiving packets from rose (rose maxframes = 6 ),
```

>jnos generates, and queues up a 'RR' frame for each frame in the one
>transmission (frames 0-5). At the end of the rose transmission, jnos
>transmits all of the queued up 'RR' frames (RR1-6). Rose upon seeing the
>first RR1, responds by resending frames 1-5.
>
> 1) The obvious quick fix is to set rose maxframes to 1. which I have done.
>
> 2) Shouldn't rose wait for ALL RR frames before it makes a desicion
>   on which frames to resend?

    The RR, was it RR C P ? If the Poll bit is set then the station must
    respond.

> 3) Shouldn't jnos wait for the end of transmission before it generates and
>   sends one RR frame for the last correct frame received ?

    It sounds like T2 aka RESPtime is NOT set greater than 1 full frame time.

> 4) Are either or both of the these responses non-complient with the
>   ax25 protocol specification?

    It does not sound like they are, it is more a configuration problem.
    I have seen ROSE act as you describe jnos when T2 was < a full frame
    time.
>
> (jnos does not appear to have the equivalent for the TNC2 RESptime ?,

    I wonder what value is being used... 0?

> Rose T1 timer does not appear to be functional ?)

    If T1 expired you would see an RR from ROSE, RR ack followed by data.
>
> Is netsig the proper place to ask about dissimilar networks
> interoperablity ? ax25 complience ?
>
   YES!

>-73- AL -----------+-------------------------------------+
>Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
>Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
>--------------------+ internet : al@ia.net   -------------+
>

11. Re: [NETSIG:630] nos/rose L2 clash

From: tmoulton@ram.net
Date: Wed, 04 Jan 95 07:11:18 EST
To: netsig@tapr.org
Message-ID: <06084.15021573@RAMail>
Rendered body type: text/plain

> We have recently added a rose switch into our local network consisting
>jnos and x1j.
>
> During the check of operations I have noticed what I believe to be ax25
>level 2 inefficency between jnos and rose. (jnos110h,rose 3.5a)
>
> Basically, when jnos is receiving packets from rose (rose maxframes = 6),
>
>jnos generates, and queues up a 'RR' frame for each frame in the one
>transmission (frames 0-5). At the end of the rose transmission, jnos
>transmits all of the queued up 'RR' frames (RR1-6). Rose upon seeing the
>first RR1, responds by resending frames 1-5.
>

How does X1J react? (Assuming that it sends more than one frame at a time)

12. Re: [NETSIG:630] nos/rose L2 clash

From: "Brian A. Lantz" <brian@lantz.com>
Date: Wed, 4 Jan 1995 09:15:05 +0000
To: netsig@tapr.org
Message-ID: <Pine.3.89.9501040941.A242-0100000@lantz.com>
Rendered body type: text/plain

On Tue, 3 Jan 1995, Alvin H. Groff - K0VM wrote:

>   We have recently added a rose switch into our local network consisting
> jnos and x1j.
>

```
[stuff omitted]

>   Is netsig the proper place to ask about dissimilar networks
>   interoperablity ? ax25 complience ?

YES! That's a good discussion for this place!

I'm wondering, are there other areas of the country where xNOS, ROSE, and
X1J are having to interact?

We have no X1J in the area at the present, but are looking at various
options to overcome some problems that we are facing, and I am wondering
If Alvin is the only other one whose tried this marriage of three
differing animals..................


-----------------------------------------------------------
Brian A. Lantz                        brian.lantz@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

13. Re: [NETSIG:630] nos/rose L2 clash

```
From: WCHAST@delphi.com
Date: Wed, 04 Jan 1995 09:48:44 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HLG0774GTS8YB6T9@delphi.com>
Rendered body type: text/plain
```

```
Al, is the JNOS device dropping data carrier for a short time after the
RR frame?? if so the ROSE switch is just doing what it thinks it is supposed
to do, send the frames that did not get ack'd. Look and see if the data
carrier is going away for just a short time, I bet that it is the case.

What version of ROSE are you running there?

-----------------------------------------------------------------------
Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi:   wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
-----------------------------------------------------------------------
```

14. Re: [NETSIG:624] X1J Curious behaviour

```
From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Wed, 4 Jan 95 10:49:41 MST
To: netsig@tapr.org
Message-ID: <m0rPZvf-0000YoC@dptspd.sat.datapoint.com>
Rendered body type: text/plain
```

```
The PINGing problem you mention is interesting.  I've not seen that on my
stack.  It would be useful if you were to show us your routing table(s).
73 de Jack
```

15. Re: [NETSIG:624] X1J Curious behaviour

```
From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Wed, 4 Jan 95 10:45:36 MST
To: netsig@tapr.org
Message-ID: <m0rPZvJ-0000hFC@dptspd.sat.datapoint.com>
Rendered body type: text/plain
```

```
If you haven't already, try the big RESET on the node.  I've found from
time-to-time "glitches" will happen and scramble a portion of the node
ROM code thus causing unusual responses.
73 de Jack
```

16. Re: [NETSIG:627] Re: X1J Curious behaviour

```
From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 4 Jan 1995 12:25:48 -0700 (MST)
To: netsig@tapr.org
```

Message-ID: <Pine.SUN.3.91.950104122026.16674A-100000@kazak>
Rendered body type: text/plain

On Tue, 3 Jan 1995, Terry Ryan wrote:

> >
> >
> >On Tue, 3 Jan 1995, Terry Ryan wrote:
> >
> >> One of our X1J-equipped nodes has developed a problem: when trying to
> >> connect to it's alias, it responds with the greeting message instead of
> >> the unnumbered acknowledge. All routing through this node using netrom
> >> has stopped. I haven't changed anything on the setup of the node (yeah,
> >
> >   Your question makes no sense. You say the netrom part of the node
> >has ceased to function. How can you expect the alias to work if netrom is
> >dead? I have never heard of netrom stopping except for major problem like
> >bank switching stoppage.
> >
> Let me rephrase... Users can no longer connect to the node using the netrom
> alias. BBSs using
> the node, who have, I assume, scripted to connect by alias, can no longer
> forward thru it. One
> CAN connect by using the call/sid, however.

        This is all different now Terry. It sounds like you need to check
the things you set into the node, like the node alias. Make sure these
exist and if it still does not work you must try a warm boot. The warm
boot will re-read the script you have on the node and maybe fix it. If
your using X1JR2 then the bbs and dx cluster alias will not work. There
was a code problem with that.

```
 ********************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                              *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet     *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12    *
 *                                                                              *
 *        Electrical Engineer with the Army Research Laboratory             *
 *                                                                              *
 ********************************************************************************
```

17. Re: [NETSIG:636] Re: X1J Curious behaviour

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 4 Jan 1995 12:33:34 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950104123058.16674B-100000@kazak>
Rendered body type: text/plain

On Wed, 4 Jan 1995, Jack Taylor wrote:

> If you haven't already, try the big RESET on the node. I've found from
> time-to-time "glitches" will happen and scramble a portion of the node
> ROM code thus causing unusual responses.
> 73 de Jack
>
        Yes me too Jack, and Happy New Year to you! I do have to reset my
x1j's about every six months or so. They seem to get sluggish and act
strange. The warm boot RESET you can give as sysop helps and the node
works well again...

```
 ********************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                              *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet     *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12    *
 *                                                                              *
 *        Electrical Engineer with the Army Research Laboratory             *
 *                                                                              *
 ********************************************************************************
```

18. Frontier Corporation and 2400 MHz

From: bruce@pixar.com (Bruce Perens)
Date: Wed, 4 Jan 95 12:16 PST
To: netsig@tapr.org
Message-ID: <m0rPc81-0006DEC@mongo.pixar.com>

Rendered body type: text/plain

I got a reply comment on the FCC 2400 MHz issue this morning from
Michael J Shortley III, Esq., of Frontier Corporation (formerly Rochester
Telephone). The essence of the reply is that they support the paired
allocation of our 2300-2310 MHz band and our 2490-2400 MHz band for
providing local-loop telephone service to areas that are currently poorly
served or under-served.

I note with irony that Rochester, New York is probably very well wired
by now. I surmise that the major reason for their request is a wish to
avoid the expense of maintaining an aging pole plant that serves semirural
subscribers.

I suspect that Mr. Shortley's office will provide you with a FAX of
their reply comment if you ask. Rochester Telephone's phone number is
716-777-1028, and their FAX is 716-546-7823. You're calling about Mr.
Shortley's reply to the FCC's ET Docket No. 94-32 .

        Bruce Perens AB6YM
--
Bruce Perens AB6YM
Voice phone: 510-215-3502 Internet: Bruce@Pixar.com
Amateur Radio: Bruce@ab6ym.ampr.org ab6ym@n0ary.#nocal.ca.usa.noam

19. Re: [NETSIG:628] 9.6 Mod For IC-IR7000?

From: Bertram Mike Curtis <wd6ehr@kaiwan.com>
Date: Wed, 4 Jan 1995 12:54:23 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501042054.MAA08705@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
>   Subject: Time:3:18 PM
>   OFFICE MEMO   9.6 Mod For IC-IR7000?   Date:1/3/95
> I'd like to set up my Icom IC-R7000 receiver to monitor 9600 Bd packet (with
> G3RUH-type modem). Anyone worked out the AF connection and tried it out?
> Looking at the schematic it appears that the connection should be to the
> output of the FM-N FM detector feeding Q13/Q14, e.g., the junction of
> R97/R99. Any suggestions before I start "hacking" will be appreciated!

I'm not specifically familiar with R7000, but I've found that most
receivers will copy 9600 baud. Does the R7000 use an fm receiver chip?
Or does it use discrete components? If it uses a receiver chip, it will
quite likely work just fine. Ditto for discrete components unless it
uses a ceramic detector, which has VERY low output (about a millivolt or
so), in which case you'll want to build up a 741 op amp preamp for it.
And yes, I know the 741 has lousy higher frequency response - which is
precisely why I specified it. It'll handle the 9600 baud signal just
fine, but will do a horrible job passing the IF :-)

If the R7000 has a very tight filter, you might need to change it for a
digital type, such as MuRata SFG455E or SFH455E. If you want to listen
to the birds, you'll want a wider filter to allow for Doppler shift.

Most IF filters are designed for maximum selectivity, at the expense of
linearity. This is not a problem with voice, but data requires a nice
linear response. the above mentioned filters are the same bandwidth as
typical voice filters, but are designed for better response, low ripple,
etc. And they're certainly cheap enough, too - but voice grade filters
are a little cheaper, so guess which ones tend to be specified by
cheapskate manufacturers? (Oh, well - I guess a buck is a buck - or
considering where the bulk of ham gear comes from, make that "yen" :-)))

20. Jnos 110g and 110h problems

From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
Date: Wed, 4 Jan 95 16:07:55 EST
To: netsig@tapr.org
Message-ID: <9501042107.AA83942@pen1.pen.k12.va.us>
Rendered body type: text/plain

Hello!
I just aquired a copy of Jnos1.10h, and am having the same
problem as I had with 1.10g. It will not decode incoming
packets. 110f works fine. The recieve light comes on on the
TNC, the program will transmit, but it will not take the
incoming packets. I'm running the version of 1.10h I got from
ftp.ucsd.edu in /hamradio/packet/tcpip/jnos. It's the .exe
available there. I'm using a 286 12 w/ 1M ram, 40m HD to run

Jnos on, with a KPC-3 tnc. I'm using the same autoexec.nos
file for all three versions. If anyone could help, it would be
most appreciated.
73
Mark, KE4MAA

--

                              _\\|//_
                             (` 0-0 ')
============================o00==(_)==00o=====================================
Mark Whittington | Co-SysOp, Outpost XIO BBS
Amateur Radio Operator KE4MAA, Tech. | Hampton, VA
mwhittin@pen.k12.va.us Internet | (804)850-0909
KE4MAA@N4HOG.VA.USA.NOAM AX.25 | Sysop: John Winsley
Power through Knowledge | FREE VALIDATION FIRST CALL!

==

21. System Design In Africa

From: Eric Rosenberg <ericr@lan.vita.org>
Date: Wed, 4 Jan 1995 16:41:07 -0500 (EST)
To: netsig@tapr.org, hfsig@vita.org
Cc: Paul Healy <phealy@mvc.ie>
Message-ID: <Pine.3.89.9501041613.A14416-0100000@lan.vita.org>
Rendered body type: text/plain

VITA, Volunteers in Technical Assistance, a non-profit development
organization based in Arlington, VA is looking for a qualified volunteer
consultant to design a terrestrial digital radio network in Guinea, west
Africa.

VITA presently operates nine offices in Guinea, most of which are already
connected by a voice (radio) network.

The consultant will meet with the project staff at the Country Office in
Conakry to determine their needs and requirements, and then travel to
some (or all) of the field offices to perform a first-hand site survey.

Upon returning home, the consultant will provide VITA with a written
report outlining the system needs with respect to hardware and software,
detail the network architecture, and make recommendations on equipment
and software to be installed at a future date. This is *not* an amateur
radio network. Familiarity with amateur radio among the project staff in
Guinea is, at best, slight.

The trip will last two weeks, and will begin in late January or early
February. VITA will be responsible for all costs and expenses related to
this trip, but is not in a position to pay a professional fee.

The consultant must have experience in the following areas: HF voice and
digital communications; system and network design; familiarity with existing
hardware and software; working knowledge of French;

If you are interested or require additional information, please contact
Eric Rosenberg at the e-mail address below.

Eric Rosenberg
Volunteers In Technical Assistance   voice: +703-276-1800
1600 Wilson Blvd., Suite 500   fax: +703-243-1865
Arlington, VA 22209 USA   ericr@vita.org

22. Re: [NETSIG:633] Re: nos/rose L2 clash

From: stewart@kepler.IFA.Hawaii.Edu (Christopher Stewart)
Date: Wed, 4 Jan 95 13:04:42 HST
To: netsig@tapr.org
Cc: .@kepler.IFA.Hawaii.Edu
Message-ID: <9501042304.AA01049@kepler.ifa.hawaii.edu>
Rendered body type: text/plain

We have one x1j node set up here at the end of the line to the rose network
to at as a conference node. It is used by some for either digipeating
or connecting to and using the avarious commands to access the rest of
the network. (X1Jv2) No problems noted. However we have no TCp/IP users
on that end either. Chris/ah6gg

23. Re: [NETSIG:641] Jnos 110g and 110h problems

From: "Bob Merritt" <ka4byp@mail.radio.org>
Date: Wed, 4 Jan 1995 18:26:45 +0000
To: netsig@tapr.org
Message-ID: <m0rPf6r-0002hFC@wa4mei.radio.org>
Rendered body type: text/plain

> From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)

> I just aquired a copy of Jnos1.10h, and am having the same
> problem as I had with 1.10g. It will not decode incoming
> packets. 110f works fine. The recieve light comes on on the
> TNC, the program will transmit, but it will not take the
> incoming packets. I'm running the version of 1.10h I got from
> ftp.ucsd.edu in /hamradio/packet/tcpip/jnos. It's the .exe
> available there. I'm using a 286 12 w/ 1M ram, 40m HD to run
> Jnos on, with a KPC-3 tnc. I'm using the same autoexec.nos
> file for all three versions. If anyone could help, it would be
> most appreciated.

Mark... try putting these lines into your autoexec.nos right after you attach
your interface.

param <your_interface_name> dtr 1
param <your_interface_name> rts 1

and I think it'll work for all the xNOS versions.

73/Bob ka4byp

Bob Merritt   ka4byp@mail.radio.org
PO Box 185
Griffin, GA 30224

24. Re: [NETSIG:641] Jnos 110g and 110h problems

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 4 Jan 1995 16:59:51 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950104165350.22174A-100000@kazak>
Rendered body type: text/plain

On Wed, 4 Jan 1995, Mark Christopher Whittington wrote:

> Hello!
> I just aquired a copy of Jnos1.10h, and am having the same
> problem as I had with 1.10g. It will not decode incoming
> packets. 110f works fine. The recieve light comes on on the
> TNC, the program will transmit, but it will not take the
> incoming packets. I'm running the version of 1.10h I got from
> ftp.ucsd.edu in /hamradio/packet/tcpip/jnos. It's the .exe
> available there. I'm using a 286 12 w/ 1M ram, 40m HD to run
> Jnos on, with a KPC-3 tnc. I'm using the same autoexec.nos
> file for all three versions. If anyone could help, it would be
> most appreciated.
> 73
> Mark, KE4MAA
>
> --

        Mark I keep up with the jnos new stuff and one undocumented thing
is that the default values changed on several important things so suggest
you check everything out. Look at maxwait for ax25 and tcp and make sure
you choose other than the default 0!!! I use 30000 and it works fine.

        Anyway I have jnos1.10h running now and it is a lot better than
jnos110f. You will be glad you changed. Also you take what the guy
compiles. I suggest you try getting the 1 meg source code and a compiler
from Borland and make your own versions....it's fun!

```
 ***************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory             *
 *                                                                           *
 ***************************************************************************
```

25. Re: [NETSIG:631] Re: nos/rose L2 clash

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
Date: Thu, 05 Jan 95 19:55:48 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <14278@k0vm.ampr.org>
Rendered body type: text/plain

```
In message <06083.15021573@RAMail> netsig@tapr.org writes:
> >  We have recently added a rose switch into our local network consisting
> >jnos and x1j.
> >
> >  During the check of operations I have noticed what I believe to be ax25
> >level 2 inefficency between jnos and rose. (jnos110h,rose 3.5a)
> >
> >  Basically, when jnos is receiving packets from rose (rose maxframes = 6 ),
> >jnos generates, and queues up a 'RR' frame for each frame in the one
> >transmission (frames 0-5). At the end of the rose transmission, jnos
> >transmits all of the queued up 'RR' frames (RR1-6). Rose upon seeing the
> >first RR1, responds by resending frames 1-5.
> >
> >  1) The obvious quick fix is to set rose maxframes to 1. which I have done.
> >
> >  2) Shouldn't rose wait for ALL RR frames before it makes a desicion
> >     on which frames to resend?
>
>     The RR, was it RR C P ? If the Poll bit is set then the station must
>     respond.

Looking at the trace files it does not appear that pollbits are
set on the RR frames from jnos...

>
> >  3) Shouldn't jnos wait for the end of transmission before it generates and
> >     sends one RR frame for the last correct frame received ?
>
>     It sounds like T2 aka RESPtime is NOT set greater than 1 full frame time.

As far as I can tell, Jnos has no means of setting T2 ( RESPtime )
At least there is no apparent ax25 sub-command

>
> >  4) Are either or both of the these responses non-complient with the
> >     ax25 protocol specification?
>
>     It does not sound like they are, it is more a configuration problem.
>     I have seen ROSE act as you describe jnos when T2 was < a full frame
>     time.
> >
> > (jnos does not appear to have the equivalent for the TNC2 RESptime ?,
>
>     I wonder what value is being used... 0?
>

My OLD copy of the AX25 protocaol spec indicates that T2 is
recommended but not required.  Could this be why word around nos
groups is 'use MAXframe of 1 for best efficeincy'

> >  Rose T1 timer does not appear to be functional ?)
>
>     If T1 expired you would see an RR from ROSE, RR ack followed by data.
> >

I have a trace file, if anyone would care to look at it, i can
post it.

-73- AL  -----------+-------------------------------------+
Al Groff, K0VM      |      bbs : k0vm@wa0rjt.ia.usa.noam  |
Cedar Rapids, Ia    |   packet : k0vm@k0vm.ampr.org       |
--------------------+ internet : al@ia.net   -------------+
```

26. Re: [NETSIG:632] Re: nos/rose L2 clash

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
Date: Thu, 05 Jan 95 20:05:19 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <14280@k0vm.ampr.org>
Rendered body type: text/plain

In message <06084.15021573@RAMail> netsig@tapr.org writes:
> > We have recently added a rose switch into our local network consisting
> >jnos and x1j.

(stuff deleted)
>
> How does X1J react? (Assuming that it sends more than one frame at a time)
>
may quick observation is that x1j is not having any problem with
either rose or jnos..

-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

27. Re: rose/nos clash

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
Date: Thu, 05 Jan 95 22:52:52 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <14282@k0vm.ampr.org>
Rendered body type: text/plain

In message <01HLG0774GTS8YB6T9@delphi.com> netsig@tapr.org writes:
> Al, is the JNOS device dropping data carrier for a short time after the
> RR frame?? if so the ROSE switch is just doing what it thinks it is supposed
> to do, send the frames that did not get ack'd. Look and see if the data
> carrier is going away for just a short time, I bet that it is the case.

I does NOT appear that the jnos carrier drops during the bust of
RR frames.. If it is, it is certainly NOT long enough to see/
detect with out a scope, etc.

>
> What version of ROSE are you running there?

Rose 3.5a

-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

28. Re: [NETSIG:647] Re: nos/rose L2 clash

From: tmoulton@ram.net
Date: Fri, 06 Jan 95 19:53:55 EST
To: netsig@tapr.org
Message-ID: <06102.15021573@RAMail>
Rendered body type: text/plain

>(stuff deleted)
>>
>> How does X1J react? (Assuming that it sends more than one frame at a time)
>
>>
>may quick observation is that x1j is not having any problem with
>either rose or jnos..

my question was:

What happens when x1j sends more than one frame to jnos?
(or Does it ever send...)

29. Re: [NETSIG:646] Re: nos/rose L2 clash

From: tmoulton@ram.net
Date: Fri, 06 Jan 95 19:54:50 EST
To: netsig@tapr.org
Message-ID: <06103.15021573@RAMail>
Rendered body type: text/plain

I would like to see the trace file.

w2vy@ram.net

30. Re: [NETSIG:647] Re: nos/rose L2 clash

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
Date: Fri, 06 Jan 95 19:23:49 CST
To: netsig%tapr.org@allanon.ia.net

Message-ID: <14324@k0vm.ampr.org>
Rendered body type: text/plain

In message <14280@k0vm.ampr.org> netsig@tapr.org writes:
> In message <06084.15021573@RAMail> netsig@tapr.org writes:
> > > > We have recently added a rose switch into our local network consisting
> > > >jnos and x1j.
>
> (stuff deleted)
> >
> > How does X1J react? (Assuming that it sends more than one frame at a time)
> >
> may quick observation is that x1j is not having any problem with
> either rose or jnos..

Upon further observation, i can say that the rose to X1j route
appears to work correctly.. When X1j receives a mulitframe
transmission it sends only one RR for the last frame received
correctly (unlike jnos, which send a RR for EACH frame received)

When X1j sends a multiframe tranmission to jnos and jnos responds
with a RR for each frame recieved, X1j responds only to the LAST
RR from jnos and continues (unlike rose, which responds to the
FIRST RR received)

-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

31. Re: [NETSIG:650] Re: nos/rose L2 clash

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
Date: Fri, 06 Jan 95 19:33:40 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <14328@k0vm.ampr.org>
Rendered body type: text/plain

In message <06103.15021573@RAMail> netsig@tapr.org writes:
> I would like to see the trace file.
>
> w2vy@ram.net

This trace file was created on the bench with a "null radio"
between 2 tncs.. Rose 3.5a is installed in a Sprint 2, Jnos 110h
is connected with Kiss to a KPC 9612.. A third TNC (mfj 1270
with TAPR TNC) with kiss to another jnos machine was used to
monitor the "radio" traffic.

>
-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+
Trace attachment---

Thu Jan 05 19:34:26 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 SABM(P)

Thu Jan 05 19:34:26 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* UA(F)

Thu Jan 05 19:34:26 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
0000 Call being Setup.

Thu Jan 05 19:34:26 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=1

Thu Jan 05 19:34:27 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000 Call Complete to INFO-0 @ 3100319393.

Thu Jan 05 19:34:27 1995 - test recv:
KISS: Port 0 Data

```
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=2 pid=Text
0000  ROSE X.25 Packet Switch Version 3.5 (940726.64K) by Thomas A. Mo
0040  ulton, W2VY./////////////////// test ////////////////////////...1
0080   ////////////////////////////////////////////////////////////.
00c0  2  ////////////////////////////////////////////////////////////

Thu Jan 05 19:34:27 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=3 pid=Text
0000  /.3  ////////////////////////////////////////////////////////
0040  ///.4  ///////////////////////////////////////////////////////
0080  /////.5  /////////////////////////////////////////////////////
00c0  ///////.6  ///////////////////////////////////////////////////

Thu Jan 05 19:34:27 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=4 pid=Text
0000  /////////.7  /////////////////////////////////////////////////
0040  ///////////.8  ////////////////////////////////////////////////
0080  /////////////.9  ////////////////////////////////////////////////
00c0  ///////////////.10 ////////////////////////////////////////////

Thu Jan 05 19:34:28 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=5 pid=Text
0000  ////////////////.11 ///////////////////////////////////////////
0040  //////////////////.12 ///////////////////////////////////////////
0080  ////////////////////.13 ///////////////////////////////////////
00c0  //////////////////////.14 /////////////////////////////////////

Thu Jan 05 19:34:28 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=6 pid=Text
0000  ////////////////////////.15 ///////////////////////////////////
0040  //////////////////////////.16 /////////////////////////////////
0080  ////////////////////////////.17 ///////////////////////////////
00c0  //////////////////////////////.18 /////////////////////////////

Thu Jan 05 19:34:30 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=2

Thu Jan 05 19:34:30 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=3

Thu Jan 05 19:34:30 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=4

Thu Jan 05 19:34:30 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=5

Thu Jan 05 19:34:31 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=2 pid=0xfb
0000  ROSE X.25 Packet Switch Version 3.5 (940726.64K) by Thomas A. Mo
0040  ulton, W2VY./////////////////// test ////////////////////////...1
0080   ////////////////////////////////////////////////////////////.
00c0  2  ////////////////////////////////////////////////////////////

Thu Jan 05 19:34:31 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=3 pid=Text
0000  /.3  ////////////////////////////////////////////////////////
0040  ///.4  ///////////////////////////////////////////////////////
0080  /////.5  /////////////////////////////////////////////////////
00c0  ///////.6  ///////////////////////////////////////////////////

Thu Jan 05 19:34:31 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=4 pid=0x2e
0000  /////////.7  /////////////////////////////////////////////////
0040  ///////////.8  ////////////////////////////////////////////////
0080  /////////////.9  ////////////////////////////////////////////////
00c0  ///////////////.10 ////////////////////////////////////////////

Thu Jan 05 19:34:31 1995 - test recv:
```

```
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=5 pid=Text
0000  /////////////////.11 ////////////////////////////////////////////
0040  ///////////////////.12 ////////////////////////////////////////////
0080  ////////////////////.13 ////////////////////////////////////////////
00c0  /////////////////////.14 ////////////////////////////////////////

Thu Jan 05 19:34:31 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=6 pid=Text
0000  ////////////////////////.15 ////////////////////////////////////
0040  /////////////////////////.16 ////////////////////////////////////
0080  //////////////////////////.17 ////////////////////////////////////
00c0  ///////////////////////////.18 ////////////////////////////////

Thu Jan 05 19:34:32 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=7 pid=Text
0000  ///////////////////////////////.19 ////////////////////////////
0040  ////////////////////////////////.20 ////////////////////////////
0080  ////////////////////////////////.

Thu Jan 05 19:34:32 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=3 pid=0x0
0000  /.3  ////////////////////////////////////////////////////////////
0040  ///.4  ////////////////////////////////////////////////////////////
0080  /////.5  ////////////////////////////////////////////////////////////
00c0  ///////.6  ////////////////////////////////////////////////////////

Thu Jan 05 19:34:32 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=4 pid=0x2e
0000  /////////.7  ////////////////////////////////////////////////////
0040  ///////////.8  ////////////////////////////////////////////////////
0080  /////////////.9  ////////////////////////////////////////////////////
00c0  ///////////////.10 ////////////////////////////////////////////////

Thu Jan 05 19:34:32 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=5 pid=Text
0000  /////////////////.11 ////////////////////////////////////////////
0040  ///////////////////.12 ////////////////////////////////////////////
0080  ////////////////////.13 ////////////////////////////////////////////
00c0  /////////////////////.14 ////////////////////////////////////////

Thu Jan 05 19:34:33 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=6 pid=Text
0000  ////////////////////////.15 ////////////////////////////////////
0040  /////////////////////////.16 ////////////////////////////////////
0080  //////////////////////////.17 ////////////////////////////////////
00c0  ///////////////////////////.18 ////////////////////////////////

Thu Jan 05 19:34:33 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=7 pid=Text
0000  ///////////////////////////////.19 ////////////////////////////
0040  ////////////////////////////////.20 ////////////////////////////
0080  ////////////////////////////////.

Thu Jan 05 19:34:33 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
0000  .EOT de INFO @ 3100319393.

Thu Jan 05 19:34:33 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=4 pid=0x3d
0000  /////////.7  ////////////////////////////////////////////////////
0040  ///////////.8  ////////////////////////////////////////////////////
0080  /////////////.9  ////////////////////////////////////////////////////
00c0  ///////////////.10 ////////////////////////////////////////////////

Thu Jan 05 19:34:33 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=5 pid=Text
0000  /////////////////.11 ////////////////////////////////////////////
0040  ///////////////////.12 ////////////////////////////////////////////
```

```
0080  ////////////////////.13 ////////////////////////////////////
00c0  ////////////////////////.14 ////////////////////////////////////

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=6 pid=Text
0000  ////////////////////////.15 ////////////////////////////////////
0040  ////////////////////////////.16 ////////////////////////////////////
0080  ////////////////////////////////.17 ////////////////////////////////////
00c0  ////////////////////////////////.18 ////////////////////////////////////

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=7 pid=Text
0000  ////////////////////////////////.19 ////////////////////////////
0040  ////////////////////////////////////.20 ////////////////////////////
0080  ////////////////////////////////////.

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
0000  .EOT de INFO @ 3100319393.

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000  .*** Call Clearing *** 00F1  Remote Station cleared connection.

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=5 pid=Text
0000  ////////////////////.11 ////////////////////////////////////////////
0040  ////////////////////.12 ////////////////////////////////////////////
0080  ////////////////////.13 ////////////////////////////////////////////
00c0  ////////////////////////.14 ////////////////////////////////////////////

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=6 pid=Text
0000  ////////////////////////.15 ////////////////////////////////////
0040  ////////////////////////////.16 ////////////////////////////////////
0080  ////////////////////////////////.17 ////////////////////////////////////
00c0  ////////////////////////////////.18 ////////////////////////////////////

Thu Jan 05 19:34:34 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=7 pid=Text
0000  ////////////////////////////////.19 ////////////////////////////
0040  ////////////////////////////////////.20 ////////////////////////////
0080  ////////////////////////////////////.

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
0000  .EOT de INFO @ 3100319393.

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000  .*** Call Clearing *** 00F1  Remote Station cleared connection.

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=6

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=7

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=7 pid=Text
0000  ////////////////////////////////.19 ////////////////////////////
0040  ////////////////////////////////////.20 ////////////////////////////
0080  ////////////////////////////////////.

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
```

```
0000  .EOT de INFO @ 3100319393.

Thu Jan 05 19:34:35 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000  .*** Call Clearing *** 00F1  Remote Station cleared connection.

Thu Jan 05 19:34:36 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=7 pid=Text
0000  ////////////////////////////////.19 ////////////////////////////
0040  ////////////////////////////////////.20 ////////////////////////
0080  ////////////////////////////////////.

Thu Jan 05 19:34:36 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
0000  .EOT de INFO @ 3100319393.

Thu Jan 05 19:34:36 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000  .*** Call Clearing *** 00F1  Remote Station cleared connection.

Thu Jan 05 19:34:38 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=0

Thu Jan 05 19:34:38 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 REJ NR=0

Thu Jan 05 19:34:38 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=0 pid=Text
0000  .EOT de INFO @ 3100319393.

Thu Jan 05 19:34:38 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000  .*** Call Clearing *** 00F1  Remote Station cleared connection.

Thu Jan 05 19:34:39 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=1

Thu Jan 05 19:34:40 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* I NR=0 NS=1 pid=Text
0000  .*** Call Clearing *** 00F1  Remote Station cleared connection.

Thu Jan 05 19:34:40 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 RR NR=2

Thu Jan 05 19:34:40 1995 - test recv:
KISS: Port 0 Data
AX25: INFO->K0VM-3 v 319393* K0VM-5* DISC

Thu Jan 05 19:34:41 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 REJ NR=2

Thu Jan 05 19:34:41 1995 - test recv:
KISS: Port 0 Data
AX25: K0VM-3->INFO v K0VM-5 319393 UA
```

32. TNC - The Next Generation

```
From: "Brian A. Lantz" <brian@lantz.com>
Date: Tue, 10 Jan 1995 16:58:17 +0000
To: TNOS Topics Mailing List <tnos-topics@lantz.com>
Cc: TAPR NETSIG Mailing List <netsig@tapr.org>,
    NOS-BBS Mailing List <nos-bbs@hydra.carleton.ca>,
    TCP Group Mailing List <tcp-group@ucsd.edu>
Message-ID: <Pine.3.89.9501101658.C5190-0100000@lantz.com>
Rendered body type: text/plain
```

This is to announce the beginning of a project to begin a publicly open development project with the goal of developing new network firmware for the

```
existing base of TNC-2 compatible TNCs. The result of this development
will be covered in the GNU General Public License (GPL) and will be freely
available.

For those of you NOT familiar with the GPL, a copy can be obtained by
anonymous ftp at ftp.lantz.com:/pub/gpl.txt.

The goal is to involve as many different individuals in the specifications,
development, and documentation as possible. While this project MAY choose to
remain backwardly compatible with some existing network firmware, this is
NOT a given. The development group will determine this.

All effort will be made to make the majority of the base code as portable
as possible to encourage it's integration into xNOS and other
computer-based solutions.

A mailing list has been created in support of this development. To join this
mailing list, send a message to "listserv@lantz.com" and in the body of the
message, just include one line (with no signature) of:

        add tnc-tng                     or
        add email-address tnc-tng

Use the first form of the command if the email address you send from is
where you wish the subscription to be sent. Use the second form to send to
another address or alias, but PLEASE make sure that the email address is
complete and valid.

There is plenty to do for both programmers and non-programmers, so please
feel free to join in.



-----------------------------------------------------------
Brian A. Lantz                        brian.lantz@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

33. Tuning tones/CALSet on mfj 1270b

```
From: Rob <mayfield@guest.adelaide.edu.au>
Date: Wed, 11 Jan 1995 13:58:50 +1030 (CST)
To: netsig@tapr.org (tapr netsig)
Message-ID: <9501110328.AA16189@wattle.itd.adelaide.edu.au>
Rendered body type: text/plain
```

```
Does anyone have the details on using calset on an mfj1270b to adjust tx and
rx tone frequencies ? I deduced that the formula require freq in hz, then jmp
9 to correct pos and tune for con-sta both on ? ie centre ?? but this was
completely guesswork :-)

The manual I have says look at chapter 5-21, which is completely unrelated.
Also, how accurate is this tuning method ? Reading the specs suggests the
method may be quite good, depending on the reference.

tnx ... Rob
```

34. [NETSIG:653] NETSIG digest 93

```
From: <MITCHELL.T@OCF.compuserve.com>
Date: 11 Jan 95 13:15:45 EST
To: <netsig@tapr.org>
Message-ID: <OCF_3444-3767@CompuServe.COM>
Rendered body type: text/plain
```

```
*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 1/11/95 12:00PM
To: INTERNET:netsig@tapr.org 18:08 EST 10-Jan-95 at OCF_INFORM
Subject: [NETSIG:653] NETSIG digest 93
Contents:
Hey folks had a question....

Why can we not utilize currently available phone modems, ie. 14.4K and
28.8K...  for packet applications?
```

What I am suggesting is using a slip connection between two points and
a dedicated channel, channels for duplex.

Since the modems will play on a telephone circuit (300-3Khz) we
could/should be able to use the modems on current analog voice
radios, without any modification.

If the problem is due to not being an AX.25 I remember that as long as
we make the code public then it is legal...

Any thoughts???

Tim KA5RYF

35. Tek Radio Meeting

From: <MITCHELL.T@OCF.compuserve.com>
Date: 11 Jan 95 13:15:43 EST
To: <netsig@tapr.org>
Message-ID: <OCF_3444-3766@CompuServe.COM>
Rendered body type: text/plain

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 1/11/95 11:28AM
To: INTERNET:netsig@tapr.org 18:08 EST 10-Jan-95 at OCF_INFORM
Subject: Tek Radio Meeting
Contents:
I wanted to let everyone know on the list server the results of
my meeting with the Tekk Radio folks....

First off, they said thank you for the feedback, (both + & -!!!)

I recapped some of the discussion from the strings on the server

Here's what they said....

There will be a new data radio for UHF comming very soon... It will have
5 watts output, 9600 baud out of the box, and 5 watts of power...

The company is launching into the mobile radio relm, and will be producing
a 35-50 watt UHF mobile. This might allow them to market a data radio with
a PA that would raise the 2-5 watt radio up to 50 watts!!! (cool!)

The company did not promise but they may be in the 900 MHz data radio soon,
since they are already handling paging and other specialized operations on
900 MHz.   The radio would be a 2-5 watt range and the same as the current
Tekk radios.

The company will be spending some time in the near future to develop
modifications for higher baud rates. Currently, the only mod they know of
is the Paccom mods. So any input from us would be helpful... (Need help
on this...)

I asked about 1.2 GHz equipment and received some positive responses. No
plans in the near future.

****

All in all the meeting was very good. They are very aware of the ham market
and will be developing some products that would be available to hams. Thanks
to everyone for your input. I will be meeting with the Tekk folks in the
future so, keep the data flowing!

Thanks,

Tim Mitchell, KA5RYF

36. Re: [NETSIG:655] NETSIG digest 93

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 11 Jan 1995 12:39:26 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501111839.MAA23750@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

I'll let everyone else tear into this, but bascially telephone circuits are
not radio ciruits. Phone modems are designed to work in a specific environment
and radio is not one of them. The complex forms of modulation schemes (keep
in mind that a 14.4Kbps modem is operating at 1200 baud) that telephone

modems use really don't work well in the multi-path environment that radio
presents is one of the largest problem. There is also a longer list of
technical reasons.

Greg

According to MITCHELL.T@OCF.compuserve.com:
>
>
> *Message:
> From: MITCHELL.T at CCPO.KCPO
> Date: 1/11/95 12:00PM
> To: INTERNET:netsig@tapr.org 18:08 EST 10-Jan-95 at OCF_INFORM
> Subject: [NETSIG:653] NETSIG digest 93
> Contents:
> Hey folks had a question....
>
> Why can we not utilize currently available phone modems, ie. 14.4K and
> 28.8K... for packet applications?
>
> What I am suggesting is using a slip connection between two points and
> a dedicated channel, channels for duplex.
>
> Since the modems will play on a telephone circuit (300-3Khz) we
> could/should be able to use the modems on current analog voice
> radios, without any modification.
>
> If the problem is due to not being an AX.25 I remember that as long as
> we make the code public then it is legal...
>
> Any thoughts???
>
> Tim KA5RYF
>
>
>

37. Re: [NETSIG:657] Re: NETSIG digest 93

From: janderson@ram.net
Date: Wed, 11 Jan 95 14:55:51 EST
To: netsig@tapr.org
Message-ID: <02082.15021591@RAMail>
Rendered body type: text/plain

>I'll let everyone else tear into this, but basically telephone circuits are
>not radio circuits. Phone modems are designed to work in a specific environment
>and radio is not one of them. The complex forms of modulation schemes (keep
>in mind that a 14.4Kbps modem is operating at 1200 baud) that telephone
>modems use really don't work well in the multi-path environment that radio
>presents is one of the largest problem. There is also a longer list of
>technical reasons.
>
>Greg

High speed phone modems are not be suitable for bursty data, but if the
multipath fading problem can be addressed it might be possible to set up full
time, high speed full duplex links. One possibility is high quality RF paths
with ample fade margin, as in point to point links with directional antennas.

Some V.32 modems support a "leased line" mode for use with four-wire analog
circuits. If analog radio links can be engineered with similar frequency
response and bandwidth characteristics it might be possible to set up a high
speed radio circuit using two RF frequencies, and high speed modems that
support "leased line" operation.

Station identification is another issue. Every 9.5 minutes or so the full
time link will have to drop long enough for a CW ID, unless AX.25 can somehow
be used.

It might be fun to experiment with sometime. The possibility of using a
V.32bis modem with V.42bis compression to pump data over a radio link is
intriguing.

Jack
N4ULS@ram.net

38. Re: [NETSIG:655] NETSIG digest 93

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 11 Jan 1995 15:25:50 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950111151604.6053A-100000@kazak>
Rendered body type: text/plain

On Wed, 11 Jan 1995 MITCHELL.T@OCF.compuserve.com wrote:

>
> *Message:
> From: MITCHELL.T at CCPO.KCPO
> Date: 1/11/95 12:00PM
> To: INTERNET:netsig@tapr.org 18:08 EST 10-Jan-95 at OCF_INFORM
> Subject: [NETSIG:653] NETSIG digest 93
> Contents:
> Hey folks had a question....
>
> Why can we not utilize currently available phone modems, ie. 14.4K and
> 28.8K... for packet applications?
>
> What I am suggesting is using a slip connection between two points and
> a dedicated channel, channels for duplex.
>
> Since the modems will play on a telephone circuit (300-3Khz) we
> could/should be able to use the modems on current analog voice
> radios, without any modification.
>
> If the problem is due to not being an AX.25 I remember that as long as
> we make the code public then it is legal...
>
> Any thoughts???
>
> Tim KA5RYF
>
>
>

Several. First how do you tell the sender to stop transmitting? How do you make the radio link duplex like the telephone circuit? How do you identify the stations?

There is no question that all the above can be answered, but when you do so it is seen that the high speed cheap modems for the telephone world will not work with the radio world without a lot of expense.

I have a friend ka5oyo who has a VERY WELL done 448.575 repeater system that is better quality than the telephone. But it still suffers from being simplex instead of duplex...and fixing that is EXPENSIVE.

So don't give up but file away the problems and try to find solutions since a 14,400 bit/sec telephone modem can be purchased for $49.00 in El Paso, TX...

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
 *   *
 * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
 *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
 *   *
 *   Electrical Engineer with the Army Research Laboratory   *
 *   *
 ****

39. Re: [NETSIG:658] Re: NETSIG digest 93

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 11 Jan 1995 16:35:51 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501112235.QAA21907@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Sounds like an article for the PSR!

Greg

According to janderson@ram.net:
>
> >I'll let everyone else tear into this, but basically telephone circuits are
> >not radio circuits. Phone modems are designed to work in a specific environment
> >and radio is not one of them. The complex forms of modulation schemes (keep

> >in mind that a 14.4Kbps modem is operating at 1200 baud) that telephone
> >modems use really don't work well in the multi-path environment that radio
> >presents is one of the largest problem. There is also a longer list of
> >technical reasons.
> >
> >Greg
>
> High speed phone modems are not be suitable for bursty data, but if the
> multipath fading problem can be addressed it might be possible to set up full
> time, high speed full duplex links. One possibility is high quality RF paths
> with ample fade margin, as in point to point links with directional antennas.
>
> Some V.32 modems support a "leased line" mode for use with four-wire analog
> circuits. If analog radio links can be engineered with similar frequency
> response and bandwidth characteristics it might be possible to set up a high
> speed radio circuit using two RF frequencies, and high speed modems that
> support "leased line" operation.
>
> Station identification is another issue. Every 9.5 minutes or so the full
> time link will have to drop long enough for a CW ID, unless AX.25 can somehow
> be used.
>
> It might be fun to experiment with sometime. The possibility of using a
> V.32bis modem with V.42bis compression to pump data over a radio link is
> intriguing.
>
> Jack
> N4ULS@ram.net
>
>

40. Re: LL modem and voice radio

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Wed, 11 Jan 1995 17:54:55 -0800 (PST)
To: netsig@tapr.org
Cc: MITCHELL.T@OCF.com
Message-ID: <199501120154.RAA12405@kaiwan009.kaiwan.com>
Rendered body type: text/plain

Regarding voice grade radios and telephone modems, there are several
missing variables in the simplistic equation:

1. Ma Bell is required to maintain certain standards regarding spectral
purity, amplitude, level, and phase. Yaesu, Kenwood, et al, are not.

2. The very nature of amateur radio is quite different than telephone.
We have propagation, QRM, multipath, etc. Ma Bell doesn't (at least not
in this country)

3. Telephone lines are full duplex (actually 4 wire circuits, with
separate receive and transmit - and yes I know they run a single pair to
your house, but it IS full duplex, using a hybrid to multiplex completely
separate Tx/Rx onto a single pair). Voice grade radios are half duplex
(or what we hams laughably call "simplex")

As much flak as Ma Bell takes about line quality, etc., they do an
incredibly good job. We tend to take it for granted that telephone
quality is some kind of minimalistic standard. It's not.

Much of the technology we use today was developed by the phone company.
That "equalizer" on your hi-fi that you use to boost bass and cut
midrange? It was invented by Ma Bell to "equalize" telephone lines (mane
the output exactly the same as the input.) The "line level" jacks on
your hi-fi? Yup - "telephone" line level. 600 ohms, with 0 dB (decibel
is 1/10th of a Bel - named after Alexander Graham Bell) being the 1 mW
mark. This was found to produce the best signal with the least battery
consumption. and "Volume unit" (VU) meters measure telephone line volume
units, with 0 dB being S-0.

If all the telephone equipment was as poor quality as even the best
amateur rigs, the modems we use for telephones would be utterly worthless.

(Remember that distortion, etc., is cumulative.)

Now that that's out of the way - will telephone modems work via RF? O
Obviously, some do. We use Bell 103 and 202 (300 baud and 1200 baud)
modems for HF and VHF. But keep in mind that these use a very simple
AFSK modulation. When we get into 9600 baud, 14k4, etc., the modulation
techniques become much more complex - and subject to errors due to a

less-than-perfect "line" (or path).

Of course, the best way to determine what will work is by
experimentation. If you know enough about landline modems, etc., first
separate the transmit and receive from the single pair used by the
modem. Next, run it through a voice grade radio.

And let us know how your experiments go. I'd LOVE to see a medium speed
modem that would work on a voice grade radio with no mods!

-- mike

41. Maxar/Moxy/Flexar Rigs

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Wed, 11 Jan 95 14:02:16 CST
To: nos-bbs@hydra.carleton.ca
Cc: netsig@tapr.org
Message-ID: <9501112202.AA01413@ingersoll.com>
Rendered body type: text/plain

On the nos-bbs list,
Al K0VM wrote:

> We have had good luck with the Motorola Maxar/Flexar/Moxy series
> of radios. These all have a very similar circuit design and

Quite a few people have told me the same. So I acquired a UHF Moxy, and am
99% done doing one right now. I am using a new TAPR modem with it also.
All the mods are done, just need to finish the cabling. Gonna try it this
weekend....

Mike WD6EHR wrote:

>Would you be willing to post the mods (I personally prefer them in simple
>form, i.e. TXD to R5-C7 jct, RXD to IC123 pin 9, remove C47, etc.) to the
>group?

I have a write up for some mods done by ve3ex in Toronto, and have also
compiled some notes on the radios. I'd be glad to post 'em somewhere. It sure
would be nice to have a packet mods repository on internet somewhere.
Hey TAPR Greg.....?

>I've seen the schematics for the Moxy and thought it looked well suited
>for 9600 FSK. I know Brian has experience with the Maxar.

Looks like it to me too, txd in to the varactor, rxd out from the discrim,
pin 9. Sounds familiar eh?

Maxar/Moxy/Flexar seem to be all very similar. Flexar's are base stations,
and Maxars/Moxies are mobiles.

>I've found that a great many radios have been successfully used @ 9k6,
>but only a small handful of hams are sharing their work - which means
>that a lot of people are unnecessarily reinventing the wheel. Even if

Amen. You sure hit the nail on the head Mike!

I cross-posted this to the TAPR netsig, as this topic is of interest there
even more so than on nos-bbs.
--
 Dave Ewaldz INGERSOLL MILLING MACHINE CO.
 N9HKM   Rockford, Illinois, USA

 Internet   - dme@ingersoll.com
 Ma-Bell   - (815)-987-6081
 Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

42. Re: [NETSIG:662] Maxar/Moxy/Flexar Rigs

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 11 Jan 1995 23:25:16 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501120525.XAA02321@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi Mike, be sure to send that to us so we can include it in the other radio
stuff.

Cheers - Greg

According to Dave Ewaldz N9HKM:
>
> On the nos-bbs list,
> Al K0VM wrote:
>
> > We have had good luck with the Motorola Maxar/Flexar/Moxy series
> > of radios. These all have a very similar circuit design and
>
> Quite a few people have told me the same. So I acquired a UHF Moxy, and am
> 99% done doing one right now. I am using a new TAPR modem with it also.
> All the mods are done, just need to finish the cabling. Gonna try it this
> weekend....
>
> Mike WD6EHR wrote:
>
> >Would you be willing to post the mods (I personally prefer them in simple
> >form, i.e. TXD to R5-C7 jct, RXD to IC123 pin 9, remove C47, etc.) to the
> >group?
>
> I have a write up for some mods done by ve3ex in Toronto, and have also
> compiled some notes on the radios. I'd be glad to post 'em somewhere. It sure
> would be nice to have a packet mods repository on internet somewhere.
> Hey TAPR Greg.....?
>
> >I've seen the schematics for the Moxy and thought it looked well suited
> >for 9600 FSK. I know Brian has experience with the Maxar.
>
> Looks like it to me too, txd in to the varactor, rxd out from the discrim,
> pin 9. Sounds familiar eh?
>
> Maxar/Moxy/Flexar seem to be all very similar. Flexar's are base stations,
> and Maxars/Moxies are mobiles.
>
> >I've found that a great many radios have been successfully used @ 9k6,
> >but only a small handful of hams are sharing their work - which means
> >that a lot of people are unnecessarily reinventing the wheel. Even if
>
> Amen. You sure hit the nail on the head Mike!
>
> I cross-posted this to the TAPR netsig, as this topic is of interest there
> even more so than on nos-bbs.
> --
> Dave Ewaldz INGERSOLL MILLING MACHINE CO.
> N9HKM   Rockford, Illinois, USA
>
> Internet   - dme@ingersoll.com
> Ma-Bell   - (815)-987-6081
> Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam
>
>

43. Re: [NETSIG:657] Re: NETSIG digest 93

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Wed, 11 Jan 1995 23:50:38 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501120750.XAA03329@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> I'll let everyone else tear into this, but bascially telephone circuits are
> not radio ciruits. Phone modems are designed to work in a specific environment
> and radio is not one of them. The complex forms of modulation schemes (keep
> in mind that a 14.4Kbps modem is operating at 1200 baud) that telephone
> modems use really don't work well in the multi-path environment that radio
> presents is one of the largest problem. There is also a longer list of
> technical reasons.

Well put. I also replied before seeing your, and we agree on all points
expressed in common.

44. Re: Maxar/Moxy/Flexar Rigs

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Thu, 12 Jan 1995 08:36:59 -0700
To: nos-bbs@hydra.carleton.ca
Cc: netsig@tapr.org
Message-ID: <199501121536.IAA14050@news.primenet.com>
Rendered body type: text/plain

Dave Ewaldz wrote:
>I have a write up for some mods done by ve3ex in Toronto, and have also
>compiled some notes on the radios. I'd be glad to post 'em somewhere. It sure
>would be nice to have a packet mods repository on internet somewhere.
>Hey TAPR Greg.....?

TAPR will have FTP service in the very near future. It will be announced in
all the usual places. There will be an uploads area. An area for mods is a
good idea...I'll work on it.

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

45. Regenerators

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
Date: 12 Jan 1995 09:58:24 -0600
To: "Post Netsig TAPR" <netsig@tapr.org>
Message-ID: <199501121555.JAA18265@ATK.COM>
Rendered body type: text/plain

Subject: Time:9:50 AM
  OFFICE MEMO   Regenerators   Date:1/12/95
What is the difference between the TAPR bit regenerator and the Xanthus?
The PacComm catalig gives the following description of the Xanthus
regenerator:

                        Xanthus Digital Regenerator

The XDR is a full duplex frame regenerator for AX.25 repeaters with the
following features:

 - Operates in any TNC-2 compatible TNC.

 - Full audio regeneration

 - Busy Tone while carrier is detected on the input

 - Only repeats valid frames

 - Operation to 9600 Baud

 - Provides consistent deviation on transmitter

 - Transmits HDLC ID every 9.5 Minutes

You no longer have to adjust the audio transfer of your repeater to
accomodate a wide range of user audio characteristics. Will not repeat
audio, can not be used as a voice repeater.

73/Rick W0TN

46. Re: [NETSIG:666] Regenerators

From: tmoulton@ram.net
Date: Thu, 12 Jan 95 12:07:12 EST
To: netsig@tapr.org
Message-ID: <06151.15021573@RAMail>
Rendered body type: text/plain

>   Subject: Time:9:50 AM
> OFFICE MEMO   Regenerators   Date:1/12/95
>What is the difference between the TAPR bit regenerator and the Xanthus?
>The PacComm catalig gives the following description of the Xanthus
>regenerator:
>
>   Xanthus Digital Regenerator
>
>The XDR is a full duplex frame regenerator for AX.25 repeaters with the
>following features:
>
> - Operates in any TNC-2 compatible TNC.
>
> - Full audio regeneration
>
> - Busy Tone while carrier is detected on the input
>
> - Only repeats valid frames

Bit regenerator repeats all frames

>
> - Operation to 9600 Baud
>
> - Provides consistent deviation on transmitter
>
> - Transmits HDLC ID every 9.5 Minutes

User station or attached tnc must send ID

>
>You no longer have to adjust the audio transfer of your repeater to
>accomodate a wide range of user audio characteristics. Will not repeat
>audio, can not be used as a voice repeater.
>---
>73/Rick W0TN
>
>

They are very close in operation. The items noted above are the two
differences I can think of.

The bit regenerator can be attached to a networking switch (such as ROSE or
NetRom/X1J) to provide LAN and WAN access.

I have not pushed usage of the XDR firmware much due to this possibility.

tom, w2vy

47. Re: [NETSIG:666] Regenerators

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Thu, 12 Jan 95 12:31:14 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <14524@k0vm.ampr.org>
Rendered body type: text/plain

In message <199501121555.JAA18265@ATK.COM> netsig@tapr.org writes:
>   Subject: Time:9:50 AM
>   OFFICE MEMO   Regenerators   Date:1/12/95
> What is the difference between the TAPR bit regenerator and the Xanthus?
> The PacComm catalig gives the following description of the Xanthus
> regenerator:
>
>   Xanthus Digital Regenerator
>
> The XDR is a full duplex frame regenerator for AX.25 repeaters with the
> following features:
>
> - Operates in any TNC-2 compatible TNC.
>
> - Full audio regeneration
>
> - Busy Tone while carrier is detected on the input
>
> - Only repeats valid frames
>
> - Operation to 9600 Baud
>
> - Provides consistent deviation on transmitter
>
> - Transmits HDLC ID every 9.5 Minutes
>
> You no longer have to adjust the audio transfer of your repeater to
> accomodate a wide range of user audio characteristics. Will not repeat
> audio, can not be used as a voice repeater.
> ---
> 73/Rick W0TN
>
The major difference that i can see is that the XDR must receive
and validate an entier frame before it can resend it thus the XDR
transimitter is keydow both during the the time it is receivng a
packet (to prevent hiddent transmitter colisions) and while it
is retansmitting a packet. The TAPR bit reg only needs to buffer
up a few bits of a packet (to account for difference between
reciever clock rate and transmit clock rate) before it began send
the packet. If the RF links are solid (i.e. not errors during
receive) then the bit regen should have greater thruput potiental

than the XDR. On poor links thruput may be a draw.

Both have much greater thru put potiential then the typical
non-repeater hidden transmitter ridden environment.

73 ----------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
----------+ internet : al@ia.net ----------+

48. BayComm Phone Nr.?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Thu, 12 Jan 1995 11:38:59 -0800
To: netsig@tapr.org
Message-ID: <ab3b354690021004bbc5@[129.46.12.181]>
Rendered body type: text/plain

I hate to ask on here, but can some one send me the number of PacComm. I
need to call them with a question before they close today. Please send
direct.
Thanks.
Marvin. WB6PKK
mmunster@qualcomm.com

49. Re: [NETSIG:668] Re: Regenerators

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 12 Jan 1995 14:49:59 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501122049.OAA17526@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Here is the extract from the TAPR Product Overview on the 9600 baud modem.
bitregn option. This info is available on the tapr listserv.
listserv@tapr.org

Please note that the TAPR bit-regen option works only in the TAPR 9600bps
modem. The purpose being that you build a 9600 baud modem with the
bit-regen option (and it also needs the clock option) by itself for
operations. No other digital equipment is required for a bit-regn system.
TAPR 9600 bps modem + bitregn option + clock option.

Cheers - Greg, WD5IVD

9600bps Modem Bit Regenerator Option
This option (works only when installed in a TAPR 9600 baud modem) is
intended only for use as part of a full-duplex 9600bps repeater. It is not
suitable for use at a home station. The bit regenerator keys the PTT line
of the modem whenever it receives an incoming signal (DCD is true). It
stores the first 8 bits in a buffer, then starts sending the bits out again,
resynchronizing them with its own crystal-controller clock to remove jitter
and noise from the received signal. The buffer is 'elastic' so it can
accommodate a slightly different '9600bps' data rate from the sending
station and its own 9600bps clock. Full-duplex bit-regenerating repeaters
for 9600bps are beginning to be used in more and more locations. It truly
makes 9600bps operation fast and friendly.

According to Al Groff - K0VM:
>
> In message <199501121555.JAA18265@ATK.COM> netsig@tapr.org writes:
> > Subject: Time:9:50 AM
> > OFFICE MEMO Regenerators Date:1/12/95
> > What is the difference between the TAPR bit regenerator and the Xanthus?
> > The PacComm catalig gives the following description of the Xanthus
> > regenerator:
> >
> > Xanthus Digital Regenerator
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> > The XDR is a full duplex frame regenerator for AX.25 repeaters with the
> > following features:
> >
> > - Operates in any TNC-2 compatible TNC.
> >

> > - Full audio regeneration
> >
> > - Busy Tone while carrier is detected on the input
> >
> > - Only repeats valid frames
> >
> > - Operation to 9600 Baud
> >
> > - Provides consistent deviation on transmitter
> >
> > - Transmits HDLC ID every 9.5 Minutes
> >
> > You no longer have to adjust the audio transfer of your repeater to
> > accomodate a wide range of user audio characteristics. Will not repeat
> > audio, can not be used as a voice repeater.
> > ---
> > 73/Rick W0TN
> >
> The major difference that i can see is that the XDR must receive
> and validate an entier frame before it can resend it thus the XDR
> transimitter is keydow both during the the time it is receivng a
> packet (to prevent hiddent transmitter colisions) and while it
> is retansmitting a packet. The TAPR bit reg only needs to buffer
> up a few bits of a packet (to account for difference between
> reciever clock rate and transmit clock rate) before it began send
> the packet. If the RF links are solid (i.e. not errors during
> receive) then the bit regen should have greater thruput potiental
> than the XDR. On poor links thruput may be a draw.
>
>
> Both have much greater thru put potiential then the typical
> non-repeater hidden transmitter ridden environment.
>
>
> 73 --+
> Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
> Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
> --------------------+ internet : al@ia.net   -------------+
>
>

50. Docs for X1J?

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
Date: 12 Jan 1995 17:17:04 -0600
To: "Post Netsig TAPR" <netsig@tapr.org>
Message-ID: <199501122312.RAA26703@ATK.COM>
Rendered body type: text/plain

Subject: Time:5:10 PM
  OFFICE MEMO   Docs for X1J?   Date:1/12/95

Where (ftp site) is documentation for X1J nodes?

73/Rick W0TN

51. [NETSIG:656] Tek Radio Meeting

From: steve.diggs@totrbbs.atl.ga.us (Steve Diggs)
Date: Tue, 13 Jan 95 11:15:00 -0500
To: netsig@tapr.org
Message-ID: <448.7.uupcb@totrbbs.atl.ga.us>
Rendered body type: text/plain

-> From: <wa4mei!emory!OCF.compuserve.com!MITCHELL.T>
-> To: netsig@tapr.org
-> Subject: [NETSIG:656] Tek Radio Meeting

-> All in all the meeting was very good. They are very aware of the ham
-> market and will be developing some products that would be available
-> to hams. Thanks to everyone for your input. I will be meeting with
-> the Tekk folks in the future so, keep the data flowing!

We are making extensive use of both TEKK radios for 9600 packet here in
Atlanta, are generally happy with the price/performace ratio we get. As
for performance, please ask them to consider improving front end
performance on the planned rigs; While the radio has excellent IF pass
characteristics, it's really a bit too good. Adjacent channel activity
gives this radio fits.

Top Of The Rock BBS - Lilburn, GA SYSOP: Steve Diggs
UUCP: totrbbs.atl.ga.us Snailmail: 4181 Wash Lee Ct.
Phone: +1 404 921 8687 Lilburn, GA 30247-7407

52. Watchdog Timer

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 13 Jan 1995 11:19:18 -0800
To: netsig@tapr.org
Message-ID: <ab3c822099021004ef58@[129.46.12.181]>
Rendered body type: text/plain

Does any one use a watchdog timer on a remote node? What if the xmitter gets stuck on. How do you handle this? Some one asked me about this, and I guess I never gave it much though before. I would like your thoughts on this. Maybe it is something obvious that I was not aware of.
Marvin - WB6PKK

53. DCD mods?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 13 Jan 1995 11:21:39 -0800
To: netsig@tapr.org
Message-ID: <ab3c82cb9a0210041762@[129.46.12.181]>
Rendered body type: text/plain

What is the best mod for (no squelch operation) DCD for a MFJ-1270 or equivelent. Are there mod circuits available somewhere?
Marvin - WB6PKK

54. Re: [NETSIG:674] DCD mods?

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 13 Jan 1995 13:51:49 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501131951.NAA19520@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Marvin Munster x5388:
>
> What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> equivelent. Are there mod circuits available somewhere?
> Marvin - WB6PKK
>
>
>

Yes. TAPR makes a XR2211 kit as an upgrade. Note: the newer 1270C don't need it.

The following is found on listser@tapr.org.

Cheers - Greg

The TAPR TNC DCD Upgrades

Background Q Proper operation of Data Carrier Detect (DCD) is imperative for efficient sharing of a packet channel. Many TNCs donUt provide optimum DCD operation, and version 2.0 of the AX.25 Level 2 protocol compounds the problem. However, an inexpensive solution is now available to combat the former case and progress is being made in the latter case with proposed changes to AX.25 Level 2 Version 2.1.

The Problem Q Over time, it has become apparent that most modems lack the proper DCD operation. Some work well, some are worse than others, some allow improper operator adjustment, and some have the RthresholdS adjustment set incorrectly. With the release of TNC-2 code 1.1.6 and later, packets that are received without the DCD being active are not passed to the user. This encourages the operator to properly set any DCD threshold control that may be on his TNC. Eric Gustafson, N7CL, has investigated this problem and his findings are available in the 7th ARRL Computer Networking Conference proceedings. It has also been published in TAPRUs Packet Status Register.

Solution Q If the DCD decision could be made on the basis of Rinformation coherenceS rather than Ris there some sort of signal or noise present?S, LAN operation would improve. This premise has been demonstrated in a number of locations where modifications to TNCs have been made. Unfortunately, these early modifications involved wire-wrapping a fair bit of circuitry, thus preventing widespread adoption of the DCD mods. The TAPR DCD kits were

designed to make it a trivial matter to upgrade most TNCs to improved DCD operation with the addition of a simple board. These mods are extremely useful for both VHF and HF operation.

====

State Machine Upgrade
For TNCs with modems such as:

KPC-1   PacComm Tiny-2/Micro-2
KPC-4   DRSI PC*PA Type 1
KPC-2400   DRSI PC*PA Type 2
KAM   AIWA APX-25
AEA PK-87   AIWA APX-25M
AEA PK-88   TASCO TNC-20
AEA PK-232   TASCO TNC-20H
PacComm TNC-220 Heath HK-232
Heath Pocket Packet

The upgrade adaptor for these TNCs adds an EPROM-based State Machine to derive DCD based on lockup of a digital phase-lock loop. It is a small PC board assembly that mounts easily inside the cabinet of most any TNC (NOT the Heath Pocket Packet/TASCO TNC-521).

This upgrade will dramatically improve DCD operation, allowing you to run your radio unsquelched. This alone reduces other stationsU TXDelay requirements, improving channel throughput.

DCD Clock Option
For TNCs with Rsoftware HDLC,S an optional clock generator may be included to provide the necessary clock signal (KPC-1, KPC-2, HF channel of KAM).

XR-2211 Upgrade
For TNCs using the XR-2211 demodulator such as:

TAPR Beta Board GLB PK-1
TNC-1   GLB TNC-2A
TNC-2   PacComm TNC-200
Heath HD-4040   MFJ 1270
AEA PKT-1   MFJ 1274
AEA PK-80   DRSI HF*MODEM

The PC board is tiny and shaped to fit into a TNC-1 or TNC-2. After construction (an hour or so), you simply unplug the XR-2211 chip from its socket, insert it into the socket on the upgrade board, then plug the upgrade board into the IC socket vacated by the XR-2211 chip on the TNC.

If you are into HF operation, provisions are made to connect a RThresholdS control onto the demodulator.

The result will be fast-attack, slow decay DCD with a hang time to compensate for temporary fades due to multipath. When all stations sharing a channel have proper DCD action, data flows more efficiently.

55. XDR regenerator

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Fri, 13 Jan 95 13:31:05 CST
To: netsig@tapr.org
Message-ID: <9501132131.AA07244@ingersoll.com>
Rendered body type: text/plain

We used to use the XDR regen firmware on our 1200baud regen rpt here in IL, and it worked very well. I do remember it delays the incoming packets to check validity, and you can actually see and decode your own packets coming out after you transmit and switch to receive. Wierd feeling. We switched from the regen firmware, to just regenerating everything based on the mod to the TNC-2 published in one of the old ARRL dcc proceedings. This increased the thruput of the channel over the XDR setup a bit. Our next step is a TAPR modem with regen option to be installed at the site with new rf hardware (micor repeater) *real soon now*.
--
 Dave Ewaldz INGERSOLL MILLING MACHINE CO.
 N9HKM   Rockford, Illinois, USA

 Internet   - dme@ingersoll.com
 Ma-Bell   - (815)-987-6081
 Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

56. TAPR 9k6 modem PTT

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Fri, 13 Jan 95 13:22:39 CST
To: netsig@tapr.org
Message-ID: <9501132122.AA07225@ingersoll.com>
Rendered body type: text/plain

I put the power last night to my Motorola Moxy and TAPR modem/mfj1270B last night and discovered this. It looks like the VN10KM Ptt MosFet in the TAPR modem is not being driven hard enough for the rig to be fully switched into xmit.

Using my Fluke DMM, I determined that the Moxy needs Ptt to be sinked to ground, drawing about 95ma doing so. It seems like using a ttl level to switch the
FET won't do it for me here. Anybody have any ideas to try? I couldn't dig up any specs on the fet, but would imagine it should be able to switch at least 500ma. The TAPR manual says "several tens of ma", but doesn't look like 95ma.
Or am I doing something wrong here?

My initial thought on a solution would be to use the unused 1/4 of opamp U22 in between U12a and the fet to provide a higher switching voltage at the gate.

Comments?

73 Dave N9HKM
--
 Dave Ewaldz INGERSOLL MILLING MACHINE CO.
 N9HKM   Rockford, Illinois, USA

 Internet   - dme@ingersoll.com
 Ma-Bell   - (815)-987-6081
 Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

57. Re: [NETSIG:674] DCD mods?

From: dkelly@tomcat1.tbe.com (David Kelly)
Date: Fri, 13 Jan 95 15:20:52 -0600
To: netsig@tapr.org
Message-ID: <9501132120.AA09845@tomcat1.tbe.com>
Rendered body type: text/plain

> What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> equivelent. Are there mod circuits available somewhere?
> Marvin - WB6PKK

TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works pretty good. Highly recomended.

73,
--
David Kelly, N4HHE,   n4hhe@amsat.org,   dkelly@nebula.tbe.com
----
Did you know that if you took all the economists in the world and lined them up end to end, they'd still point in the wrong direction?

58. Re: [NETSIG:673] Watchdog Timer

From: dkelly@tomcat1.tbe.com (David Kelly)
Date: Fri, 13 Jan 95 15:24:18 -0600
To: netsig@tapr.org
Message-ID: <9501132124.AA10000@tomcat1.tbe.com>
Rendered body type: text/plain

> Does any one use a watchdog timer on a remote node? What if the xmitter
> gets stuck on. How do you handle this? Some one asked me about this, and
> I guess I never gave it much though before. I would like your thoughts on
> this. Maybe it is something obvious that I was not aware of.
> Marvin - WB6PKK

The watchdog you describe is built into most TNC's. Actually, I don't know of one without. Baycom-style schematics I've seen lack a Tx watchdog.

Meanwhile on remote JNOS systems we use a Radio Shack light timer on the CPU to force a crash once per night. Somebody got tired of making trips to the remote sites...

73,
--
David Kelly, N4HHE,   n4hhe@amsat.org,   dkelly@nebula.tbe.com

---
Did you know that if you took all the economists in the world and lined
them up end to end, they'd still point in the wrong direction?

59. Re: [NETSIG:677] TAPR 9k6 modem PTT

From: MPFahmie@lbl.gov (Mike Fahmie)
Date: Fri, 13 Jan 1995 14:16:57 -0800
To: netsig@tapr.org
Message-ID: <199501132217.OAA11314@ux5.lbl.gov>
Rendered body type: text/plain

>I put the power last night to my Motorola Moxy and TAPR modem/mfj1270B last
>night and discovered this. It looks like the VN10KM Ptt MosFet in the TAPR
>modem is not being driven hard enough for the rig to be fully switched into
>xmit.
>
>Using my Fluke DMM, I determined that the Moxy needs Ptt to be sinked to
>ground, drawing about 95ma doing so. It seems like using a ttl level to
>switch the
>FET won't do it for me here. Anybody have any ideas to try? I couldn't dig
>up any specs on the fet, but would imagine it should be able to switch at
>least 500ma. The TAPR manual says "several tens of ma", but doesn't look
>like 95ma.
>Or am I doing something wrong here?
>
>My initial thought on a solution would be to use the unused 1/4 of opamp U22
>in between U12a and the fet to provide a higher switching voltage at the gate.
>
>Comments?
>
>73 Dave N9HKM
>--

I looked up the specs on that FET in my shiny new Siliconix catalog and
the device curves indicate that you should be able to switch 100 ma easily
with 4 volts of Gate drive. The drop across the FET would be about 1/2 volt.

Does the Gate have a pull-up resistor to +5 volts? Does the drive actually
get there (+5v)? As the drive drops below 3 volts, the voltage across the
FET will rise quickly (@100ma).

At 25 degrees Cent ambient
The maximum continuous Drain current is 300 ma.
The maximum power dissipation is 1 watt.

I have encountered a few radios that cannot tolerate very much drop across
the PTT switch, that may be worth checking in your radio.

 Mike Fahmie - WA6ZTY @ N6EEG - MPFahmie@lbl.gov
Advanced Light Source - Lawrence Berkeley Laboratory

60. Re: [NETSIG:673] Watchdog Timer

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 13 Jan 1995 16:03:04 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950113155301.20586B-100000@kazak>
Rendered body type: text/plain

On Fri, 13 Jan 1995, Marvin Munster x5388 wrote:

> Does any one use a watchdog timer on a remote node? What if the xmitter
> gets stuck on. How do you handle this? Some one asked me about this, and
> I guess I never gave it much though before. I would like your thoughts on
> this. Maybe it is something obvious that I was not aware of.
> Marvin - WB6PKK
>
>
>
        Everyone using a TNC-2 or a clone of same has a timer that drops
the push to talk line after approx 30 seconds of keyup. This will keep
the TNC from doing the keyup in error, but if the radio fails it will
stay up until you turn off the main radio controlled switch that turns
off the whole node. You do have one of those don't you?

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *

```
*                                                                            *
*  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
*    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
*                                                                            *
*        Electrical Engineer with the Army Research Laboratory               *
*                                                                            *
******************************************************************************
```

61. Re: Moxy PTT

From: johnson@mmsi.com (Lyle Johnson)
Date: Fri, 13 Jan 95 16:33:23 MST
To: netsig@tapr.org
Message-ID: <9501132333.AA17505@modular-2>
Rendered body type: text/plain

Dave,

The VN10KM can indeed handle 95 mA, *BUT* to do so it needs +10V on its gate relative to ground. The TNC-2 design drives the gate with +5volts, so th einternal resistance of the FET is a little high.

Unfortunately, many older Motorola radios were designed when relays were in vouge, and required not only unreaosnable PTT currents (like 95 mA) but very low resistance switching. I don't know if the Moxy is as bad as a Mitrek, for example, which wil happily modulate the carrier with any noise it finds on the channel select line!

Anyway, the solution to your problem is either

(a) add a relay to the MOXY to handle the current and drive the realy from the TNC-2 PTT Line, or

(b) change the VN10 for a power FET that is happy with +5 volts drive and whose output resistance is within what the Moxy will tolerate. You didn't really specify what that is (e.g., how many ohms must the FET output resistance be before trouble starts). I would suggest a Siliconix Si9410DY - this is an 8-pin SOIC device that can withstand 3 VOlts drain-to-source, has 0.040 ohms resistance when the gat eis driven by 5 volts (0.050 ohms when driven by 4.5 volts) and is rated to handle 6 amps. It is small enough to be fitted into the TNC-2 PCB, but isn't a TO-92 device so you have be a little clever when you wire it in. I am sure IR, Harris and others also make suitable transistors, but not in the TO-92 package.

Cheers,

Lyle

62. Re: [NETSIG:679] Re: Watchdog Timer

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 13 Jan 1995 16:00:59 -0800
To: netsig@tapr.org
Message-ID: <ab3cc45aa30210047e72@[129.46.12.181]>
Rendered body type: text/plain

```
>> Does any one use a watchdog timer on a remote node?  What if the xmitter
>> gets stuck on.  How do you handle this?  Some one asked me about this, and
>> I guess I never gave it much though before.  I would like your thoughts on
>> this.  Maybe it is something obvious that I was not aware of.
>> Marvin - WB6PKK
>
>The watchdog you describe is built into most TNC's. Actually, I don't know
>of one without. Baycom-style schematics I've seen lack a Tx watchdog.
>
>Meanwhile on remote JNOS systems we use a Radio Shack light timer on the
>CPU to force a crash once per night. Somebody got tired of making trips
>to the remote sites...
>
>73,
>--
>David Kelly, N4HHE,   n4hhe@amsat.org,    dkelly@nebula.tbe.com
>-------------------------------------------------------------------
>Did you know that if you took all the economists in the world and lined
>them up end to end, they'd still point in the wrong direction?

Thanks.  I guess that is why I never thought about it before.
Marvin
```

63. Re: [NETSIG:681] Re: Watchdog Timer

From: janderson@ram.net
Date: Fri, 13 Jan 95 18:57:57 EST
To: netsig@tapr.org
Message-ID: <02109.15021591@RAMail>
Rendered body type: text/plain

> Does any one use a watchdog timer on a remote node? What if the xmitter
> gets stuck on. How do you handle this? Some one asked me about this, and
> I guess I never gave it much though before. I would like your thoughts on
> this. Maybe it is something obvious that I was not aware of.
> Marvin - WB6PKK

Most nodes get a mod that increases the timeout from 30 seconds to around 3
minutes. This permits some of the longer PTT's we see with a typical node
but still disables (hopefully) the system if it locks up in TX.

Jack
n4uls@ram.net

64. Re: [NETSIG:655] NETSIG digest 93

From: WCHAST@delphi.com
Date: Sat, 14 Jan 1995 00:05:10 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HLTEPSO2HW910UJV@delphi.com>
Rendered body type: text/plain

I did a data link using 9k6 QAM modems back in 1987. The link was full
duplex and ran over a 57km path between Puerto Barrios Guatemala and
Finca Motagua Guatemala.

This link was built for Del Monte Fresh Fruit to link some remote terminals
in the banana production area to a IBM System 36 in Guatemala City,
Guatemala. The link on the Puerto Barrios side terminated into a 4 wire
telephone circuit that went on microwave to Guate' City.

The equipment used were two full duplex 470mhz repeaters running 100 watt
amplifiers. These units had on each end a antenna array of four 30 element
yagi's built by M^2 Enterprises (Mike Stahl of KLM fame) The need for the
high gain (21.5 db over a dipole on one and 21.75db over a dipole on the
other) was due to a obstical on the Puerto Barrios end of the link,
there was a ridge of mountains about 1700m high just west of Puerto Barrios
some 8km. We had to go over that ridge, and the antennas and power gave
us the signal needed for 98% reliability.

The modems used were IBM modems, they worked very well except when there was
rapid fading then the 40 second resync time at times would keep the units
from synching. The initial test had been done with Motorola Codex modems
which would re-synch much faster (in about 2 seconds)

Here is what I noticed with QAM modulation:

It was VERY sensitive to multi-path, in fact when I did the bench test
of the link (only using the 5 watt exciters on each end) just walking
around in the room would cause the signals to drop out of synch.

Once the link was up and running on the yagi's it would run until fading
due to thunderstorms over the mountain ridge would take it off line for
a few seconds.

The other problem was caused by Turbo Thrush Commander crop dusters dusting
the plantation and flying along the signal path, there would be rapid fading
as long as the aircraft was flying parallel to the signal path, but just
within a few degrees of the signal path, we had them fly at 90' to the
signal path and that eliminated that problem.

I think you can do some full duplex RF paths and even some half duplex
paths if you have the leased line optioned modems that allow half duplex
operation. You need a GOOD FADE MARGIN and SIGNAL TO NOISE RATIO, but
above all YOU MUST AVOID MULTIPATH... With the leased line modems you
will need some way of activating the PTT line of the radio, and the
modem should have a PAD command (equivalent to TXDelay) to allow the
line time to stablize. You will want to set the PAD command to whatever
the radios need to get TX power up and the RX side stable, just as you
would with regular packet radio.

Your radio should be flat from about 300 hz to 3khz. I used the flat input
and output on the repeater devices, that keep things just fine on my links.

Try it you will find that some applications will run just fine.

```
---------------------------------------------------------------------------
Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi:   wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---------------------------------------------------------------------------
```

65. Re: [NETSIG:663] Re: Maxar/Moxy/Flexar R

```
From: WCHAST@delphi.com
Date: Sat, 14 Jan 1995 00:06:04 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HLTEQZ5D34910UJV@delphi.com>
Rendered body type: text/plain
```

Here is a bit you all might find interesting, I also posted it to NOS-BBS

I think that one of the best kept secrets out there is the Motorola Radius series radios, it only takes about 15 minutes to mod one of these radios to do 9k6 and do it pretty well.

We have several of these units running here at TPALAN, and they do quite well.

The mode involves removing a cap a resistor and running a wire. This mod is for the GM300 or any of the series that uses the HLN 8074 logic board.

Locate and remove C668 (on top of board)
Locate and remove R671 (on bottom of board)

Run a jumper from the hole that the high side of C668 was solder in, to the trace between U653 pin 7 and C660. This will bypass the splatter filter in the Radius.

Then you move 1 jumper (if you want to keep mic audio) or 2 jumpers (if you are worried about noise from the mic circuits)

Move jumper block at P551 (three pin header) to the "flat unmuted" position, (must do)

If you are worried about mic noise remove jumper block on P651

On the 16 pin accessory connector you will find the following pins
Pin 3 --- PTT
Pin 5 --- Flat TxAudio
Pin 7 --- Gnd
Pin 11 -- RxAudio

There is already a plug on the connector and the radio comes with a small kit of extra pins, build your self a cable.

Your Motorola Radius is now 9k6 data ready.

These radios come in VHF low band/high band and UHF. So we have 3 bands covered here. The only part not covered as far as I know is the 435 to 438 segement on 70cm. But there is a version for 403 to 435 and the other one will cover from 438 to 470. The price is right, in particular if you are using them for networking ect, you can get a 1 or 2 channel model for about $350 (1-25w) or $375 (25-40w) I have some of them with TXDelays of about 60ms, and suspect that with some tuning and perhaps looking for errant oversized caps, that might be dropped somewhat more.

Now if Motorola will just add one more 2 position jumper we will not even NEED the wire jumper mod!

```
---------------------------------------------------------------------------
Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi:   wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---------------------------------------------------------------------------
```

66. Re: [NETSIG:677] TAPR 9k6 modem PTT

From: "Robert E. Brose II" <bob@kunk.n0qbj.ampr.org>
Date: Sat, 14 Jan 1995 00:34:14 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501140634.AA00424@kunk.n0qbj.ampr.org>
Rendered body type: text/plain

User Dave Ewaldz N9HKM says:
>
> I put the power last night to my Motorola Moxy and TAPR modem/mfj1270B last
> night and discovered this. It looks like the VN10KM Ptt MosFet in the TAPR
> modem is not being driven hard enough for the rig to be fully switched into
> xmit.
>
> Using my Fluke DMM, I determined that the Moxy needs Ptt to be sinked to
> ground, drawing about 95ma doing so. It seems like using a ttl level to
> switch the
> FET won't do it for me here. Anybody have any ideas to try? I couldn't dig
> up any specs on the fet, but would imagine it should be able to switch at
> least 500ma. The TAPR manual says "several tens of ma", but doesn't look
> like 95ma.
> Or am I doing something wrong here?
>
> My initial thought on a solution would be to use the unused 1/4 of opamp U22
> in between U12a and the fet to provide a higher switching voltage at the gate.
>
> Comments?

I have a pair of the tapr modems and when using them with a mitrek ran into
a similar problem which was solved by jumpering over the 100 ohm resistor
which is in series with the vn10 (it's right near the modem rf connector).

I don't know if it's drawing too much power but I don't think so. It's been
running over a year and the paccom modems don't have the resistor and
they work fine with the mitrek.

Getting rid of the 100 ohm resistor allows the mitrek ptt to be drawn close
enough to gnd to do the job.

73, Bob
--
Robert E. Brose II   N0QBJ (WAMPES TCP/IP on 449.400, 430.150 and 144.990)
                        Amprnet: bob@n0qbj-uhf.ampr.org (44.94.9.9)
                        Packet: N0QBJ@WB0GDB.#STP.MN.USA.NOAM
Internet: EMAIL bob@os9.jriver.com   WWW http://www.jriver.com/~bob/

67. Re: [NETSIG:669] BayComm Phone Nr.?

From: WCHAST@delphi.com
Date: Sat, 14 Jan 1995 00:06:15 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HLTERH16DY910UJV@delphi.com>
Rendered body type: text/plain

813.874.2980

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---

68. [NETSIG:636] Re: X1J Curious behaviour

From: n7oo@huachuca-emh8.army.mil (N7oo@huachuca-emh8.army.mil)
Date: Wed, 4 Jan 1995 12:06:00 GMT
To: netsig@tapr.org
Message-ID: <950113235859187@phx-az.com>
Rendered body type: text/plain

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
To: netsig@tapr.org
Date: Wed, 4 Jan 95 12:06 CST
Subject: [NETSIG:636] Re: X1J Curious behaviour

If you haven't already, try the big RESET on the node. I've found from
time-to-time "glitches" will happen and scramble a portion of the node
ROM code thus causing unusual responses.
73 de Jack

69. [NETSIG:650] Re: nos/rose L2 clash

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Fri, 6 Jan 1995 19:06:00 GMT
To: netsig@tapr.org
Message-ID: <950113235903199@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Fri, 6 Jan 95 19:06 CST
Subject: [NETSIG:650] Re: nos/rose L2 clash

I would like to see the trace file.

w2vy@ram.net

70. [NETSIG:674] DCD mods?

From: marvin.munster.x5388@phx-az.com (Marvin Munster X5388)
Date: Fri, 13 Jan 1995 13:32:00 GMT
To: netsig@tapr.org
Message-ID: <950113235911222@phx-az.com>
Rendered body type: text/plain

From: mmunster@qualcomm.com (Marvin Munster x5388)
To: netsig@tapr.org
Date: Fri, 13 Jan 95 13:32 CST
Subject: [NETSIG:674] DCD mods?

What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
equivelent. Are there mod circuits available somewhere?
Marvin - WB6PKK

71. [NETSIG:649] Re: nos/rose L2 clash

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Fri, 6 Jan 1995 18:55:00 GMT
To: netsig@tapr.org
Message-ID: <950113235903198@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Fri, 6 Jan 95 18:55 CST
Subject: [NETSIG:649] Re: nos/rose L2 clash

>(stuff deleted)
>>
>> How does X1J react? (Assuming that it sends more than one frame at a time)
>
>>
>may quick observation is that x1j is not having any problem with
>either rose or jnos..

my question was:

What happens when x1j sends more than one frame to jnos?
(or Does it ever send...)

72. [NETSIG:635] Re: X1J Curious behaviour

From: n7oo@huachuca-emh8.army.mil (N7oo@huachuca-emh8.army.mil)
Date: Wed, 4 Jan 1995 12:04:00 GMT
To: netsig@tapr.org
Message-ID: <950113235859186@phx-az.com>
Rendered body type: text/plain

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
To: netsig@tapr.org
Date: Wed, 4 Jan 95 12:04 CST
Subject: [NETSIG:635] Re: X1J Curious behaviour

The PINGing problem you mention is interesting. I've not seen that on my
stack. It would be useful if you were to show us your routing table(s).
73 de Jack

73. [NETSIG:629] Re: X1J Curious behaviour

From: michael.h..foster@phx-az.com (Michael H. Foster)
Date: Tue, 3 Jan 1995 16:12:00 GMT
To: netsig@tapr.org
Message-ID: <950113235857178@phx-az.com>

Rendered body type: text/plain

From: mfoster@amoco.com (Michael H. Foster)
To: netsig@tapr.org
Date: Tue, 3 Jan 95 16:12 CST
Subject: [NETSIG:629] Re: X1J Curious behaviour

Terry, did you put the patch into your X1J nodes?

We noticed that when folks tried to use the alias when the buffers were
low, the node rejected the connections with a "node busy".

Mike

74. [NETSIG:671] Docs for X1J?

From: rick_whiting@atk.com (Rick_whiting@atk.com)
Date: Thu, 12 Jan 1995 17:25:00 GMT
To: netsig@tapr.org
Message-ID: <950113235910220@phx-az.com>
Rendered body type: text/plain

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
To: netsig@tapr.org
Date: Thu, 12 Jan 95 17:25 CST
Subject: [NETSIG:671] Docs for X1J?

	Subject:	Time:5:10 PM
OFFICE MEMO	Docs for X1J?	Date:1/12/95

Where (ftp site) is documentation for X1J nodes?

73/Rick W0TN

75. [NETSIG:643] Re: nos/rose L2 clash

From: christopher.stewart@phx-az.com (Christopher Stewart)
Date: Wed, 4 Jan 1995 17:08:00 GMT
To: netsig@tapr.org
Message-ID: <950113235901192@phx-az.com>
Rendered body type: text/plain

From: stewart@kepler.IFA.Hawaii.Edu (Christopher Stewart)
To: netsig@tapr.org
Date: Wed, 4 Jan 95 17:08 CST
Subject: [NETSIG:643] Re: nos/rose L2 clash

We have one x1j node set up here at the end of the line to the rose network
to at as a conference node. It is used by some for either digipeating
or connecting to and using the a various commands to access the rest of
the network. (X1Jv2) No problems noted. However we have no TCp/IP users
on that end either. Chris/ah6gg

76. [NETSIG:669] BayComm Phone Nr.?

From: marvin.munster.x5388@phx-az.com (Marvin Munster X5388)
Date: Thu, 12 Jan 1995 13:40:00 GMT
To: netsig@tapr.org
Message-ID: <950113235909218@phx-az.com>
Rendered body type: text/plain

From: mmunster@qualcomm.com (Marvin Munster x5388)
To: netsig@tapr.org
Date: Thu, 12 Jan 95 13:40 CST
Subject: [NETSIG:669] BayComm Phone Nr.?

I hate to ask on here, but can some one send me the number of PacComm. I
need to call them with a question before they close today. Please send
direct.
Thanks.
Marvin. WB6PKK
mmunster@qualcomm.com

77. [NETSIG:673] Watchdog Timer

From: marvin.munster.x5388@phx-az.com (Marvin Munster X5388)
Date: Fri, 13 Jan 1995 13:20:00 GMT
To: netsig@tapr.org
Message-ID: <950113235911223@phx-az.com>
Rendered body type: text/plain

From: mmunster@qualcomm.com (Marvin Munster x5388)
To: netsig@tapr.org

Date: Fri, 13 Jan 95 13:20 CST
Subject: [NETSIG:673] Watchdog Timer

Does any one use a watchdog timer on a remote node? What if the xmitter gets stuck on. How do you handle this? Some one asked me about this, and I guess I never gave it much though before. I would like your thoughts on this. Maybe it is something obvious that I was not aware of.
Marvin - WB6PKK

78. [NETSIG:665] Re: Maxar/Moxy/Flexar Rigs

From: bob.nielsen@phx-az.com (Bob Nielsen)
Date: Thu, 12 Jan 1995 09:46:00 GMT
To: netsig@tapr.org
Message-ID: <950113235908214@phx-az.com>
Rendered body type: text/plain

From: nielsen@PrimeNet.Com (Bob Nielsen)
To: netsig@tapr.org
Date: Thu, 12 Jan 95 09:46 CST
Subject: [NETSIG:665] Re: Maxar/Moxy/Flexar Rigs

Dave Ewaldz wrote:
>I have a write up for some mods done by ve3ex in Toronto, and have also
>compiled some notes on the radios. I'd be glad to post 'em somewhere. It sure
>would be nice to have a packet mods repository on internet somewhere.
>Hey TAPR Greg.....?

TAPR will have FTP service in the very near future. It will be announced in all the usual places. There will be an uploads area. An area for mods is a good idea...I'll work on it.

Bob

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@crc.w6swe.ampr.org

79. [NETSIG:678] Re: DCD mods?

From: david.kelly@phx-az.com (David Kelly)
Date: Fri, 13 Jan 1995 15:26:00 GMT
To: netsig@tapr.org
Message-ID: <950113235912227@phx-az.com>
Rendered body type: text/plain

From: dkelly@tomcat1.tbe.com (David Kelly)
To: netsig@tapr.org
Date: Fri, 13 Jan 95 15:26 CST
Subject: [NETSIG:678] Re: DCD mods?

> What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> equivelent. Are there mod circuits available somewhere?
> Marvin - WB6PKK

TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works pretty good. Highly recomended.

73,
--
David Kelly, N4HHE, n4hhe@amsat.org, dkelly@nebula.tbe.com

Did you know that if you took all the economists in the world and lined them up end to end, they'd still point in the wrong direction?

80. [NETSIG:634] Re: nos/rose L2 clash

From: wchast@delphi.com (Wchast@delphi.com)
Date: Wed, 4 Jan 1995 08:56:00 GMT
To: netsig@tapr.org
Message-ID: <950113235858183@phx-az.com>
Rendered body type: text/plain

From: WCHAST@delphi.com
To: netsig@tapr.org
Date: Wed, 4 Jan 95 08:56 CST
Subject: [NETSIG:634] Re: nos/rose L2 clash

Al, is the JNOS device dropping data carrier for a short time after the RR frame?? if so the ROSE switch is just doing what it thinks it is supposed to do, send the frames that did not get ack'd. Look and see if the data

carrier is going away for just a short time, I bet that it is the case.

What version of ROSE are you running there?

```
------------------------------------------------------------------------
Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi:   wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
------------------------------------------------------------------------
```

81. [NETSIG:654] Tuning tones/CALSet on mfj 1270b

```
From: mayfield@guest.adelaide.edu.au (Mayfield@guest.adelaide.edu.au)
Date: Tue, 10 Jan 1995 21:39:00 GMT
To: netsig@tapr.org
Message-ID: <950113235905203@phx-az.com>
Rendered body type: text/plain
```

From: Rob <mayfield@guest.adelaide.edu.au>
To: netsig@tapr.org
Date: Tue, 10 Jan 95 21:39 CST
Subject: [NETSIG:654] Tuning tones/CALSet on mfj 1270b

Does anyone have the details on using calset on an mfj1270b to adjust tx and rx tone frequencies ? I deduced that the formula require freq in hz, then jmp 9 to correct pos and tune for con-sta both on ? ie centre ?? but this was completely guesswork :-)

The manual I have says look at chapter 5-21, which is completely unrelated. Also, how accurate is this tuning method ? Reading the specs suggests the method may be quite good, depending on the reference.

tnx ... Rob

82. [NETSIG:647] Re: nos/rose L2 clash

```
From: alvin.h..groff.-.k0vm@phx-az.com (Alvin H. Groff - K0vm)
Date: Fri,  6 Jan 1995 16:20:00 GMT
To: netsig@tapr.org
Message-ID: <950113235902196@phx-az.com>
Rendered body type: text/plain
```

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
To: netsig@tapr.org
Date: Fri, 6 Jan 95 16:20 CST
Subject: [NETSIG:647] Re: nos/rose L2 clash

In message <06084.15021573@RAMail> netsig@tapr.org writes:
> > We have recently added a rose switch into our local network consisting
> >jnos and x1j.

(stuff deleted)
>
> How does X1J react? (Assuming that it sends more than one frame at a time)
>
may quick observation is that x1j is not having any problem with
either rose or jnos..

```
-73- AL  -----------+-------------------------------------+
Al Groff, K0VM      |      bbs : k0vm@wa0rjt.ia.usa.noam  |
Cedar Rapids, Ia    |   packet : k0vm@k0vm.ampr.org       |
--------------------+ internet : al@ia.net   -------------+
```

83. [NETSIG:684] Re: Watchdog Timer

```
From: janderson@ram.net (Janderson@ram.net)
Date: Fri, 13 Jan 1995 18:43:00 GMT
To: netsig@tapr.org
Message-ID: <950113235913231@phx-az.com>
Rendered body type: text/plain
```

From: janderson@ram.net
To: netsig@tapr.org
Date: Fri, 13 Jan 95 18:43 CST
Subject: [NETSIG:684] Re: Watchdog Timer

> Does any one use a watchdog timer on a remote node? What if the xmitter
> gets stuck on. How do you handle this? Some one asked me about this, and

> I guess I never gave it much though before. I would like your thoughts on
> this. Maybe it is something obvious that I was not aware of.
> Marvin - WB6PKK

Most nodes get a mod that increases the timeout from 30 seconds to around 3
minutes. This permits some of the longer PTT's we see with a typical node
but still disables (hopefully) the system if it locks up in TX.

Jack
n4uls@ram.net

84. [NETSIG:632] Re: nos/rose L2 clash

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Wed, 4 Jan 1995 06:17:00 GMT
To: netsig@tapr.org
Message-ID: <950113235858181@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Wed, 4 Jan 95 06:17 CST
Subject: [NETSIG:632] Re: nos/rose L2 clash

> We have recently added a rose switch into our local network consisting
>jnos and x1j.
>
> During the check of operations I have noticed what I believe to be ax25
>level 2 inefficency between jnos and rose. (jnos110h,rose 3.5a)
>
> Basically, when jnos is receiving packets from rose (rose maxframes = 6),
>
>jnos generates, and queues up a 'RR' frame for each frame in the one
>transmission (frames 0-5). At the end of the rose transmission, jnos
>transmits all of the queued up 'RR' frames (RR1-6). Rose upon seeing the
>first RR1, responds by resending frames 1-5.
>

How does X1J react? (Assuming that it sends more than one frame at a time)

85. [NETSIG:628] 9.6 Mod For IC-IR7000?

From: rick_whiting@atk.com (Rick_whiting@atk.com)
Date: Tue, 3 Jan 1995 16:01:00 GMT
To: netsig@tapr.org
Message-ID: <950113235856177@phx-az.com>
Rendered body type: text/plain

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
To: netsig@tapr.org
Date: Tue, 3 Jan 95 16:01 CST
Subject: [NETSIG:628] 9.6 Mod For IC-IR7000?

                      Subject: Time:3:18 PM
  OFFICE MEMO   9.6 Mod For IC-IR7000?   Date:1/3/95
I'd like to set up my Icom IC-R7000 receiver to monitor 9600 Bd packet (with
G3RUH-type modem). Anyone worked out the AF connection and tried it out?
Looking at the schematic it appears that the connection should be to the
output of the FM-N FM detector feeding Q13/Q14, e.g., the junction of
R97/R99. Any suggestions before I start "hacking" will be appreciated!

73/Rick W0TN

86. [NETSIG:664] Re: NETSIG digest 93

From: wd6ehr@kaiwan.com (Wd6ehr@kaiwan.com)
Date: Thu, 12 Jan 1995 01:53:00 GMT
To: netsig@tapr.org
Message-ID: <950113235908213@phx-az.com>
Rendered body type: text/plain

From: Mike Curtis <wd6ehr@kaiwan.com>
To: netsig@tapr.org
Date: Thu, 12 Jan 95 01:53 CST
Subject: [NETSIG:664] Re: NETSIG digest 93

>
> I'll let everyone else tear into this, but bascially telephone circuits are
> not radio ciruits. Phone modems are designed to work in a specific environmen
t
> and radio is not one of them. The complex forms of modulation schemes (keep

> in mind that a 14.4Kbps modem is operating at 1200 baud) that telephone
> modems use really don't work well in the multi-path environment that radio
> presents is one of the largest problem. There is also a longer list of
> technical reasons.

Well put. I also replied before seeing your, and we agree on all points
expressed in common.

87. [NETSIG:622] NETSIG Message Traffic Help

From: andrew.j..lynch@phx-az.com (Andrew J. Lynch)
Date: Tue, 3 Jan 1995 09:43:00 GMT
To: netsig@tapr.org
Message-ID: <950113235855171@phx-az.com>
Rendered body type: text/plain

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
To: netsig@tapr.org
Date: Tue, 3 Jan 95 09:43 CST
Subject: [NETSIG:622] NETSIG Message Traffic Help

Form: Memo
Text: (16 lines follow)
NETSIG Folks!
I am glad to see this SIG perk up recently, but the increased mail is
getting a bit crazy... Is there any way to have this list send its messages
in a DIGEST format? Other lists I read (WIN3-L, etc) have an option to "SET
DIGEST" and get all the list messages in one huge email rather than several
individual messages. I really prefer this since if it stops the barrage of
email messages popular lists can cause.

If anyone knows the magic commands, please let me know. I read the help
file I requested, but couldn't find anything on this.

Thanks!

73

Andrew Lynch, N8VEM
Use Proportional Font: true
Attachment Count: 0

88. [NETSIG:655] NETSIG digest 93

From: mitchell.t@ocf.compuserve.com (Mitchell.t@ocf.compuserve.com)
Date: Wed, 11 Jan 1995 12:24:00 GMT
To: netsig@tapr.org
Message-ID: <950113235905204@phx-az.com>
Rendered body type: text/plain

From: <MITCHELL.T@OCF.compuserve.com>
To: netsig@tapr.org
Date: Wed, 11 Jan 95 12:24 CST
Subject: [NETSIG:655] NETSIG digest 93

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 1/11/95 12:00PM
To: INTERNET:netsig@tapr.org 18:08 EST 10-Jan-95 at OCF_INFORM
Subject: [NETSIG:653] NETSIG digest 93
Contents:
Hey folks had a question....

Why can we not utilize currently available phone modems, ie. 14.4K and
28.8K... for packet applications?

What I am suggesting is using a slip connection between two points and
a dedicated channel, channels for duplex.

Since the modems will play on a telephone circuit (300-3Khz) we
could/should be able to use the modems on current analog voice
radios, without any modification.

If the problem is due to not being an AX.25 I remember that as long as
we make the code public then it is legal...

Any thoughts???

Tim KA5RYF

89. [NETSIG:624] X1J Curious behaviour

From: terry.ryan@phx-az.com (Terry Ryan)
Date: Tue, 3 Jan 1995 10:43:00 GMT
To: netsig@tapr.org
Message-ID: <950113235855173@phx-az.com>
Rendered body type: text/plain

From: n3fih@omni.voicenet.com (Terry Ryan)
To: netsig@tapr.org
Date: Tue, 3 Jan 95 10:43 CST
Subject: [NETSIG:624] X1J Curious behaviour

One of our X1J-equipped nodes has developed a problem: when trying to
connect to it's alias, it responds with the greeting message instead of
the unnumbered acknowledge. All routing through this node using netrom
has stopped. I haven't changed anything on the setup of the node (yeah,
I know, they all say that) except for playing around with the IP routing.
Connects to the call/sid connect OK, first time every time. Attempts
to connect to the alias get an immediate response from the node, but
unfortunatly the wrong response.

The other curious thing I've noticed is ping-ing problems. I've set up the
3 node stack with 1 (external) IP address using the internal pseudo-address
approach documented in the X1J manual. Any time someone pings someone
routed to a different freq. (thru the stack) they get a response, and
another, and another continuously for several minutes, at a rate of about
one response every 15-20 seconds. These spurious responses seem to come
from the node itself, not the ping-er or the ping-ee.

Any help on either problem would be very much appreciated.

Terry Ryan, n3fih

90. [NETSIG:676] XDR regenerator

From: dave.ewaldz.n9hkm@phx-az.com (Dave Ewaldz N9hkm)
Date: Fri, 13 Jan 1995 14:16:00 GMT
To: netsig@tapr.org
Message-ID: <950113235911225@phx-az.com>
Rendered body type: text/plain

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
To: netsig@tapr.org
Date: Fri, 13 Jan 95 14:16 CST
Subject: [NETSIG:676] XDR regenerator

We used to use the XDR regen firmware on our 1200baud regen rpt here in IL,
and it worked very well. I do remember it delays the incoming packets to
check validity, and you can actually see and decode your own packets coming
out after you transmit and switch to receive. Wierd feeling. We switched
from the regen firmware, to just regenerating everything based on the mod to
the TNC-2 published in one of the old ARRL dcc proceedings. This increased
the thruput of the channel over the XDR setup a bit. Our next step is a TAPR
modem with regen option to be installed at the site with new rf hardware
(micor repeater) *real soon now*.
--
 Dave Ewaldz INGERSOLL MILLING MACHINE CO.
 N9HKM   Rockford, Illinois, USA

 Internet   - dme@ingersoll.com
 Ma-Bell   - (815)-987-6081
 Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

91. [NETSIG:638] Re: X1J Curious behaviour

From: k5di@kazak.nmsu.edu (K5di@kazak.nmsu.edu)
Date: Wed, 4 Jan 1995 13:41:00 GMT
To: netsig@tapr.org
Message-ID: <950113235900189@phx-az.com>
Rendered body type: text/plain

From: Klarsen <k5di@kazak.NMSU.Edu>
To: netsig@tapr.org
Date: Wed, 4 Jan 95 13:41 CST
Subject: [NETSIG:638] Re: X1J Curious behaviour

On Wed, 4 Jan 1995, Jack Taylor wrote:

> If you haven't already, try the big RESET on the node. I've found from

> time-to-time "glitches" will happen and scramble a portion of the node
> ROM code thus causing unusual responses.
> 73 de Jack
>
       Yes me too Jack, and Happy New Year to you! I do have to reset my
x1j's about every six months or so. They seem to get sluggish and act
strange. The warm boot RESET you can give as sysop helps and the node
works well again...

```
 ****************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory              *
 *                                                                           *
 ****************************************************************************
```

92. [NETSIG:648] Re: rose/nos clash

From: alvin.h..groff.-.k0vm@phx-az.com (Alvin H. Groff - K0vm)
Date: Fri, 6 Jan 1995 16:21:00 GMT
To: netsig@tapr.org
Message-ID: <950113235902197@phx-az.com>
Rendered body type: text/plain

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
To: netsig@tapr.org
Date: Fri, 6 Jan 95 16:21 CST
Subject: [NETSIG:648] Re: rose/nos clash

In message <01HLG0774GTS8YB6T9@delphi.com> netsig@tapr.org writes:
> Al, is the JNOS device dropping data carrier for a short time after the
> RR frame?? if so the ROSE switch is just doing what it thinks it is supposed
> to do, send the frames that did not get ack'd. Look and see if the data
> carrier is going away for just a short time, I bet that it is the case.

I does NOT appear that the jnos carrier drops during the bust of
RR frames.. If it is, it is certainly NOT long enough to see/
detect with out a scope, etc.

>
> What version of ROSE are you running there?

Rose 3.5a

```
-73- AL  -----------+-------------------------------------+
Al Groff, K0VM      |      bbs : k0vm@wa0rjt.ia.usa.noam  |
Cedar Rapids, Ia    |   packet : k0vm@k0vm.ampr.org       |
--------------------+ internet : al@ia.net   -------------+
```

93. [NETSIG:651] Re: nos/rose L2 clash

From: alvin.h..groff.-.k0vm@phx-az.com (Alvin H. Groff - K0vm)
Date: Fri, 6 Jan 1995 19:35:00 GMT
To: netsig@tapr.org
Message-ID: <950113235903200@phx-az.com>
Rendered body type: text/plain

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
To: netsig@tapr.org
Date: Fri, 6 Jan 95 19:35 CST
Subject: [NETSIG:651] Re: nos/rose L2 clash

In message <14280@k0vm.ampr.org> netsig@tapr.org writes:
> In message <06084.15021573@RAMail> netsig@tapr.org writes:
> > > We have recently added a rose switch into our local network consisting
> > >jnos and x1j.
>
> (stuff deleted)
> >
> > How does X1J react? (Assuming that it sends more than one frame at a time)
> >
> may quick observation is that x1j is not having any problem with
> either rose or jnos..

Upon further observation, i can say that the rose to X1j route
appears to work correctly.. When X1j receives a mulitframe
transmission it sends only one RR for the last frame received

correctly (unlike jnos, which send a RR for EACH frame received)

When X1j sends a multiframe tranmission to jnos and jnos responds
with a RR for each frame recieved, X1j responds only to the LAST
RR from jnos and continues (unlike rose, which responds to the
FIRST RR received)

-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

94. [NETSIG:625] Re: NETSIG Message Traffic Help

From: gjones@tenet.edu (Gjones@tenet.edu)
Date: Tue, 3 Jan 1995 14:11:00 GMT
To: netsig@tapr.org
Message-ID: <950113235855174@phx-az.com>
Rendered body type: text/plain

From: Greg Jones <gjones@tenet.edu>
To: netsig@tapr.org
Date: Tue, 3 Jan 95 14:11 CST
Subject: [NETSIG:625] Re: NETSIG Message Traffic Help

Yes, you can set any of the TAPR lists for digest mode.

Send e-mail to 'listserv@tapr.org'
and in the message body include the set command. Here is the definition.

        'set <list> mail digest': your message is not sent back to you.
                New messages are not sent to you as they arrive, but are
                accumulated into digests that are periodically sent to you.

So,

set netsig mail digest

should work.

Cheers - Greg

According to Andrew J. Lynch:
>
> Form: Memo
> Text: (16 lines follow)
> NETSIG Folks!
> I am glad to see this SIG perk up recently, but the increased mail is
> getting a bit crazy... Is there any way to have this list send its messages
> in a DIGEST format? Other lists I read (WIN3-L, etc) have an option to "SET
> DIGEST" and get all the list messages in one huge email rather than several
> individual messages. I really prefer this since if it stops the barrage of
> email messages popular lists can cause.
>
> If anyone knows the magic commands, please let me know. I read the help
> file I requested, but couldn't find anything on this.
>
> Thanks!
>
> 73
>
> Andrew Lynch, N8VEM
> Use Proportional Font: true
> Attachment Count: 0
>

95. [NETSIG:679] Re: Watchdog Timer

From: david.kelly@phx-az.com (David Kelly)
Date: Fri, 13 Jan 1995 15:43:00 GMT
To: netsig@tapr.org
Message-ID: <950113235912228@phx-az.com>
Rendered body type: text/plain

From: dkelly@tomcat1.tbe.com (David Kelly)
To: netsig@tapr.org
Date: Fri, 13 Jan 95 15:43 CST
Subject: [NETSIG:679] Re: Watchdog Timer

> Does any one use a watchdog timer on a remote node? What if the xmitter
> gets stuck on. How do you handle this? Some one asked me about this, and

> I guess I never gave it much though before. I would like your thoughts on
> this. Maybe it is something obvious that I was not aware of.
> Marvin - WB6PKK

The watchdog you describe is built into most TNC's. Actually, I don't know
of one without. Baycom-style schematics I've seen lack a Tx watchdog.

Meanwhile on remote JNOS systems we use a Radio Shack light timer on the
CPU to force a crash once per night. Somebody got tired of making trips
to the remote sites...

73,
--
David Kelly, N4HHE,   n4hhe@amsat.org,   dkelly@nebula.tbe.com
----
Did you know that if you took all the economists in the world and lined
them up end to end, they'd still point in the wrong direction?

96. [NETSIG:641] Jnos 110g and 110h problems

From: mark.christopher.whittington@phx-az.com (Mark Christopher Whittington)
Date: Wed, 4 Jan 1995 15:19:00 GMT
To: netsig@tapr.org
Message-ID: <950113235901191@phx-az.com>
Rendered body type: text/plain

From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
To: netsig@tapr.org
Date: Wed, 4 Jan 95 15:19 CST
Subject: [NETSIG:641] Jnos 110g and 110h problems

Hello!
I just aquired a copy of Jnos1.10h, and am having the same
problem as I had with 1.10g. It will not decode incoming
packets. 110f works fine. The recieve light comes on on the
TNC, the program will transmit, but it will not take the
incoming packets. I'm running the version of 1.10h I got from
ftp.ucsd.edu in /hamradio/packet/tcpip/jnos. It's the .exe
available there. I'm using a 286 12 w/ 1M ram, 40m HD to run
Jnos on, with a KPC-3 tnc. I'm using the same autoexec.nos
file for all three versions. If anyone could help, it would be
most appreciated.
73
Mark, KE4MAA

--
                              _\\|//_
                             (` 0-0 ')
============================o00==(_)==00o=====================================
Mark Whittington | Co-SysOp, Outpost XIO BBS
Amateur Radio Operator KE4MAA, Tech. | Hampton, VA
mwhittin@pen.k12.va.us Internet | (804)850-0909
KE4MAA@N4HOG.VA.USA.NOAM AX.25 | Sysop: John Winsley
Power through Knowledge | FREE VALIDATION FIRST CALL!
==

97. [NETSIG:667] Re: Regenerators

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Thu, 12 Jan 1995 11:09:00 GMT
To: netsig@tapr.org
Message-ID: <950113235909216@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Thu, 12 Jan 95 11:09 CST
Subject: [NETSIG:667] Re: Regenerators

>   Subject: Time:9:50 AM
> OFFICE MEMO   Regenerators   Date:1/12/95
>What is the difference between the TAPR bit regenerator and the Xanthus?
>The PacComm catalig gives the following description of the Xanthus
>regenerator:
>
>   Xanthus Digital Regenerator
>
>The XDR is a full duplex frame regenerator for AX.25 repeaters with the
>following features:
>
> - Operates in any TNC-2 compatible TNC.

>
> - Full audio regeneration
>
> - Busy Tone while carrier is detected on the input
>
> - Only repeats valid frames

Bit regenerator repeats all frames

>
> - Operation to 9600 Baud
>
> - Provides consistent deviation on transmitter
>
> - Transmits HDLC ID every 9.5 Minutes

User station or attached tnc must send ID

>
>You no longer have to adjust the audio transfer of your repeater to
>accomodate a wide range of user audio characteristics. Will not repeat
>audio, can not be used as a voice repeater.
>---
>73/Rick W0TN
>
>

They are very close in operation. The items noted above are the two
differences I can think of.

The bit regenerator can be attached to a networking switch (such as ROSE or
NetRom/X1J) to provide LAN and WAN access.

I have not pushed usage of the XDR firmware much due to this possibility.

tom, w2vy

98. [NETSIG:627] Re: X1J Curious behaviour

From: terry.ryan@phx-az.com (Terry Ryan)
Date: Tue, 3 Jan 1995 15:52:00 GMT
To: netsig@tapr.org
Message-ID: <950113235856176@phx-az.com>
Rendered body type: text/plain

From: n3fih@omni.voicenet.com (Terry Ryan)
To: netsig@tapr.org
Date: Tue, 3 Jan 95 15:52 CST
Subject: [NETSIG:627] Re: X1J Curious behaviour

>
>
>On Tue, 3 Jan 1995, Terry Ryan wrote:
>
>> One of our X1J-equipped nodes has developed a problem: when trying to
>> connect to it's alias, it responds with the greeting message instead of
>> the unnumbered acknowledge. All routing through this node using netrom
>> has stopped. I haven't changed anything on the setup of the node (yeah,

>   Your question makes no sense. You say the netrom part of the node
>has ceased to function. How can you expect the alias to work if netrom is
>dead? I have never heard of netrom stopping except for major problem like
>bank switching stoppage.

Let me rephrase... Users can no longer connect to the node using the netrom
alias. BBSs using
the node, who have, I assume, scripted to connect by alias, can no longer
forward thru it. One
CAN connect by using the call/sid, however.

Watching this on the trace screen, I noticed that when connecting to the
call/sid, the
first response from the node is unnumbered ack. However, when attempting to
connect to the alias, it responds with the 'welcome to' message. I assume
because the
state tables dictating this procedure want an unnumbered ack, they do not
recognize
the node responding, and hence do not establish a connection.

Terry Ryan

99. [NETSIG:666] Regenerators

From: rick_whiting@atk.com (Rick_whiting@atk.com)
Date: Thu, 12 Jan 1995 09:57:00 GMT
To: netsig@tapr.org
Message-ID: <950113235908215@phx-az.com>
Rendered body type: text/plain

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
To: netsig@tapr.org
Date: Thu, 12 Jan 95 09:57 CST
Subject: [NETSIG:666] Regenerators

```
                       Subject:                              Time:9:50 AM
  OFFICE MEMO          Regenerators                          Date:1/12/95
What is the difference between the TAPR bit regenerator and the Xanthus?
The PacComm catalig gives the following description of the Xanthus
regenerator:

                        Xanthus Digital Regenerator

The XDR is a full duplex frame regenerator for AX.25 repeaters with the
following features:

 - Operates in any TNC-2 compatible TNC.

 - Full audio regeneration

 - Busy Tone while carrier is detected on the input

 - Only repeats valid frames

 - Operation to 9600 Baud

 - Provides consistent deviation on transmitter

 - Transmits HDLC ID every 9.5 Minutes

You no longer have to adjust the audio transfer of your repeater to
accomodate a wide range of user audio characteristics. Will not repeat
audio, can not be used as a voice repeater.
---
73/Rick W0TN
```

100. [NETSIG:657] Re: NETSIG digest 93

From: gjones@tenet.edu (Gjones@tenet.edu)
Date: Wed, 11 Jan 1995 12:42:00 GMT
To: netsig@tapr.org
Message-ID: <950113235905206@phx-az.com>
Rendered body type: text/plain

From: Greg Jones <gjones@tenet.edu>
To: netsig@tapr.org
Date: Wed, 11 Jan 95 12:42 CST
Subject: [NETSIG:657] Re: NETSIG digest 93

I'll let everyone else tear into this, but bascially telephone circuits are
not radio ciruits. Phone modems are designed to work in a specific environment
and radio is not one of them. The complex forms of modulation schemes (keep
in mind that a 14.4Kbps modem is operating at 1200 baud) that telephone
modems use really don't work well in the multi-path environment that radio
presents is one of the largest problem. There is also a longer list of
technical reasons.

Greg

According to MITCHELL.T@OCF.compuserve.com:
>
>
> *Message:
> From: MITCHELL.T at CCPO.KCPO
> Date: 1/11/95 12:00PM
> To: INTERNET:netsig@tapr.org 18:08 EST 10-Jan-95 at OCF_INFORM
> Subject: [NETSIG:653] NETSIG digest 93
> Contents:
> Hey folks had a question....
>
> Why can we not utilize currently available phone modems, ie. 14.4K and
> 28.8K... for packet applications?

>
> What I am suggesting is using a slip connection between two points and
> a dedicated channel, channels for duplex.
>
> Since the modems will play on a telephone circuit (300-3Khz) we
> could/should be able to use the modems on current analog voice
> radios, without any modification.
>
> If the problem is due to not being an AX.25 I remember that as long as
> we make the code public then it is legal...
>
> Any thoughts???
>
> Tim KA5RYF
>
>
>

101. [NETSIG:672] Tek Radio Meeting

From: steve.diggs@phx-az.com (Steve Diggs)
Date: Fri, 13 Jan 1995 11:37:00 GMT
To: netsig@tapr.org
Message-ID: <950113235910221@phx-az.com>
Rendered body type: text/plain

From: steve.diggs@totrbbs.atl.ga.us (Steve Diggs)
To: netsig@tapr.org
Date: Fri, 13 Jan 95 11:37 CST
Subject: [NETSIG:672] Tek Radio Meeting

-> From: <wa4mei!emory!OCF.compuserve.com!MITCHELL.T>
-> To: netsig@tapr.org
-> Subject: [NETSIG:656] Tek Radio Meeting

-> All in all the meeting was very good. They are very aware of the ham
-> market and will be developing some products that would be available
-> to hams. Thanks to everyone for your input. I will be meeting with
-> the Tekk folks in the future so, keep the data flowing!

We are making extensive use of both TEKK radios for 9600 packet here in
Atlanta, are generally happy with the price/performace ratio we get. As
for performance, please ask them to consider improving front end
performance on the planned rigs; While the radio has excellent IF pass
characteristics, it's really a bit too good. Adjacent channel activity
gives this radio fits.

Top Of The Rock BBS - Lilburn, GA   SYSOP: Steve Diggs
UUCP: totrbbs.atl.ga.us   Snailmail: 4181 Wash Lee Ct.
Phone: +1 404 921 8687   Lilburn, GA 30247-7407

102. [NETSIG:630] nos/rose L2 clash

From: alvin.h..groff.-.k0vm@phx-az.com (Alvin H. Groff - K0vm)
Date: Tue, 3 Jan 1995 17:14:00 GMT
To: netsig@tapr.org
Message-ID: <950113235857179@phx-az.com>
Rendered body type: text/plain

From: k0vm@k0vm.ampr.org (Alvin H. Groff - K0VM)
To: netsig@tapr.org
Date: Tue, 3 Jan 95 17:14 CST
Subject: [NETSIG:630] nos/rose L2 clash

  We have recently added a rose switch into our local network consisting
jnos and x1j.

  During the check of operations I have noticed what I believe to be ax25
level 2 inefficency between jnos and rose. (jnos110h,rose 3.5a)

  Basically, when jnos is receiving packets from rose (rose maxframes = 6),
jnos generates, and queues up a 'RR' frame for each frame in the one
transmission (frames 0-5). At the end of the rose transmission, jnos
transmits all of the queued up 'RR' frames (RR1-6). Rose upon seeing the
first RR1, responds by resending frames 1-5.

  1) The obvious quick fix is to set rose maxframes to 1. which I have done.
  2) Shouldn't rose wait for ALL RR frames before it makes a desicion
  on which frames to resend?
  3) Shouldn't jnos wait for the end of transmission before it generates and

sends one RR frame for the last correct frame received ?
4) Are either or both of the these responses non-complient with the
ax25 protocol specification?

(jnos does not appear to have the equivalent for the TNC2 RESptime ?,
Rose T1 timer does not appear to be functional ?)

Is netsig the proper place to ask about dissimilar networks
interoperablity ? ax25 complience ?

-73- AL ----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net ----------+

103. [NETSIG:623] Winsock TCP/IP and Packet Radio dreams

From: andrew.j..lynch@phx-az.com (Andrew J. Lynch)
Date: Tue, 3 Jan 1995 10:33:00 GMT
To: netsig@tapr.org
Message-ID: <950113235855172@phx-az.com>
Rendered body type: text/plain

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
To: netsig@tapr.org
Date: Tue, 3 Jan 95 10:33 CST
Subject: [NETSIG:623] Winsock TCP/IP and Packet Radio dreams

Form: Memo
Text: (21 lines follow)
NETSIG Gurus:

I would love to be able to run Winsock TCP/IP applications over packet
radio. Of course, this means there must be a driver to connect the Winsock
applications to a TNC. ETHRAX25 allows such a connection, but requires a
KISS compatible TNC on a serial port. I would like to find a similar
program for the BAYCOM style modems. If you know of one, please contact me
or post to this list.

I am currently running KA9Q NOS (G1BEE version) in DOS with a BAYCOM driver
and modem. I would really like to find a windows version of this system if
possible.

73

Andrew Lynch, N8VEM

PS, please do not suggest that I get a KISS compatible TNC, since I am
already planning to get one (eventually--several months at least with the
rate my personal situation is going). In the meantime, however, a BAYCOM
compatible converted PMP is all I have.
Use Proportional Font: true
Attachment Count: 0

104. Re: [NETSIG:644] Re: Jnos 110g and 110h problems

From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
Date: Sat, 14 Jan 95 16:34:58 EST
To: netsig@tapr.org
Message-ID: <9501142134.AA54503@pen1.pen.k12.va.us>
Rendered body type: text/plain

According to Bob Merritt:
>
>
> > From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
>
> > I just aquired a copy of Jnos1.10h, and am having the same
> > problem as I had with 1.10g. It will not decode incoming
> > packets. 110f works fine. The recieve light comes on on the
> > TNC, the program will transmit, but it will not take the
> > incoming packets. I'm running the version of 1.10h I got from
> > ftp.ucsd.edu in /hamradio/packet/tcpip/jnos. It's the .exe
> > available there. I'm using a 286 12 w/ 1M ram, 40m HD to run
> > Jnos on, with a KPC-3 tnc. I'm using the same autoexec.nos
> > file for all three versions. If anyone could help, it would be
> > most appreciated.
>
> Mark... try putting these lines into your autoexec.nos right after you attach
> your interface.
>

> param <your_interface_name> dtr 1
> param <your_interface_name> rts 1
>
> and I think it'll work for all the xNOS versions.
>
> 73/Bob ka4byp
> ------
> Bob Merritt   ka4byp@mail.radio.org
> PO Box 185
> Griffin, GA 30224
>

I just noticed that I never thanked you for your help. The
information you provided solved my problem!
73!
Mark, KE4MAA

--
```
                              _\\|//_
                             (` 0-0 `)
============================o00==(_)==00o=====================================
Mark Whittington                       | Co-SysOp, Outpost XIO BBS
Amateur Radio Operator KE4MAA, Tech.   | Hampton, VA
mwhittin@pen.k12.va.us  Internet       | (804)850-0909
KE4MAA@N4HOG.VA.USA.NOAM AX.25         | Sysop: John Winsley
*Power through Knowledge*              | FREE VALIDATION FIRST CALL!
================================================================================
```

105. Re: [NETSIG:645] Re: Jnos 110g and 110h problems

From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
Date: Sat, 14 Jan 95 16:36:51 EST
To: netsig@tapr.org
Message-ID: <9501142136.AA94444@pen1.pen.k12.va.us>
Rendered body type: text/plain

According to Klarsen:
>
>
>
> On Wed, 4 Jan 1995, Mark Christopher Whittington wrote:
>
> > Hello!
> > I just aquired a copy of Jnos1.10h, and am having the same
> > problem as I had with 1.10g. It will not decode incoming
> > packets. 110f works fine. The recieve light comes on on the
> > TNC, the program will transmit, but it will not take the
> > incoming packets. I'm running the version of 1.10h I got from
> > ftp.ucsd.edu in /hamradio/packet/tcpip/jnos. It's the .exe
> > available there. I'm using a 286 12 w/ 1M ram, 40m HD to run
> > Jnos on, with a KPC-3 tnc. I'm using the same autoexec.nos
> > file for all three versions. If anyone could help, it would be
> > most appreciated.
> > 73
> > Mark, KE4MAA
> >
> > --
>
>   Mark I keep up with the jnos new stuff and one undocumented thing
> is that the default values changed on several important things so suggest
> you check everything out. Look at maxwait for ax25 and tcp and make sure
> you choose other than the default 0!!! I use 30000 and it works fine.
>
>   Anyway I have jnos1.10h running now and it is a lot better than
> jnos110f. You will be glad you changed. Also you take what the guy
> compiles. I suggest you try getting the 1 meg source code and a compiler
> from Borland and make your own versions....it's fun!
>
>
>
>
> **
> * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
> *   *
> * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
> *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
> *   *
> *   Electrical Engineer with the Army Research Laboratory   *
> *   *

> **
>
>
>
>

I just realised that I didn't thank you for your help.
Although that was not the problem, I appreciate your time!
73
Mark, KE4MAA

--

                              _\\|//_
                             (` 0-0 ')
============================o00==(_)==00o=====================================
Mark Whittington | Co-SysOp, Outpost XIO BBS
Amateur Radio Operator KE4MAA, Tech. | Hampton, VA
mwhittin@pen.k12.va.us Internet | (804)850-0909
KE4MAA@N4HOG.VA.USA.NOAM AX.25 | Sysop: John Winsley
Power through Knowledge | FREE VALIDATION FIRST CALL!
==

106. Re: [NETSIG:700] Re: DCD mods?

From: Rob <mayfield@guest.adelaide.edu.au>

Date: Sat, 14 Jan 1995 22:23:47 +1030 (CST)
To: netsig@tapr.org
Message-ID: <9501141153.AA27809@wattle.itd.adelaide.edu.au>
Rendered body type: text/plain

*** David Kelly tapped ....:
> > What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> > equivelent. Are there mod circuits available somewhere?
> > Marvin - WB6PKK
>
> TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works
> pretty good. Highly recomended.
>

How does this improve on the existing DCD in the 1270 ? are there
details of the circuit design available ?

Rob

--

rob mayfield asc p/l box 73 oaklands park   mayfield@itd.adelaide.edu.au
vk5xxx@vk5xxx.#adl.#sa.aus.oc   I am the dreamer ...
http://wattle.itd.adelaide.edu.au/~mayfield   ... you are the dream

107. Re: [NETSIG:691] DCD mods?

From: nielsen@PrimeNet.Com (Bob Nielsen)

Date: Sat, 14 Jan 1995 09:38:56 -0700
To: netsig@tapr.org
Message-ID: <199501141638.JAA28486@news.primenet.com>
Rendered body type: text/plain

>From: mmunster@qualcomm.com (Marvin Munster x5388)
>To: netsig@tapr.org
>Date: Fri, 13 Jan 95 13:32 CST
>Subject: [NETSIG:674] DCD mods?
>
>What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
>equivelent. Are there mod circuits available somewhere?
>Marvin - WB6PKK

The XR2211 gives somewhat adequate DCD performance by itself, depending on
the audio noise characteristics of the input signal (for fm receiver vhf/uhf
afsk). For HF (or if the unsquelched noise output triggers the DCD), the
TAPR 2211 DCD kit is a very good low priced solution. It is a small board
which plugs into the 2211 socket and the 2211 must be plugged into a socket
on the DCD board. In most cases one external wire to the TNC board is also
required. N7CL wrote some mods which improve the performance of the stock
TNC in a PSR several years ago, but the DCD kit is even better,

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

108. Re: [NETSIG:702] Tuning tones/CALSet on mfj 1270b

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Sat, 14 Jan 1995 09:38:59 -0700
To: netsig@tapr.org
Message-ID: <199501141638.JAA28491@news.primenet.com>
Rendered body type: text/plain

The information is in the TAPR TNC-2 manual, available by mail from TAPR and
will be on the soon-to-be-accessable tapr.org ftp server.

Bob

>From: Rob <mayfield@guest.adelaide.edu.au>
>To: netsig@tapr.org
>Date: Tue, 10 Jan 95 21:39 CST
>Subject: [NETSIG:654] Tuning tones/CALSet on mfj 1270b
>
>Does anyone have the details on using calset on an mfj1270b to adjust tx and
>rx tone frequencies ? I deduced that the formula require freq in hz, then jmp
>9 to correct pos and tune for con-sta both on ? ie centre ?? but this was
>completely guesswork :-)
>
>The manual I have says look at chapter 5-21, which is completely unrelated.
>Also, how accurate is this tuning method ? Reading the specs suggests the
>method may be quite good, depending on the reference.
>
>tnx ... Rob
>
>

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@crc.w6swe.ampr.org

109. looping of messages

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Sat, 14 Jan 1995 09:39:02 -0700
To: netsig@tapr.org
Message-ID: <199501141638.JAA28497@news.primenet.com>
Rendered body type: text/plain

I have received several message repeats today, only from this list, which
show a from: line rewritten as the <original originator>@phx-az.com. Is any
one else getting these or know where the problem is (somewhere in Phoenix)?

Bob

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@crc.w6swe.ampr.org

110. Re: [NETSIG:727] Re: DCD mods?

From: dkelly@tomcat1.tbe.com (David Kelly)
Date: Sat, 14 Jan 95 17:51:50 -0600
To: netsig@tapr.org
Message-ID: <9501142351.AA13050@tomcat1.tbe.com>
Rendered body type: text/plain

> *** David Kelly tapped ....:
> > > What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> > > equivelent. Are there mod circuits available somewhere?
> > > Marvin - WB6PKK
> >
> > TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works
> > pretty good. Highly recomended.
> >
>
> How does this improve on the existing DCD in the 1270 ? are there
> details of the circuit design available ?
>
> Rob

As some have pointed out, there are several versions of the MFJ 1270.
One suggested the 1270C comes from the factory ready for open squelch
operation.

Reading old (1991?) data from TAPR on their DCD mod kit, they basically
make the decision "is there a signal" based on data content rather than

simple PL lock from the XR2211 modem. Its such a fundamental thing one
might wonder how they ever thought they could do without it.

73,
--
David Kelly, N4HHE,   n4hhe@amsat.org,   dkelly@nebula.tbe.com
----
Did you know that if you took all the economists in the world and lined
them up end to end, they'd still point in the wrong direction?

111. Re: [NETSIG:674] DCD mods?

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sat, 14 Jan 1995 15:57:05 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501142357.PAA11287@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> equivelent. Are there mod circuits available somewhere?
> Marvin - WB6PKK
>

The 1270 will work with open squelch if you set it per the manual - DCD
flashes about 10% of the time. However, for "true" DCD operation, get
the TAPR kit (about $10 or $15) for the XR chipset.

-- mike curtis
wd6ehr@kaiwan.com

112. Re: [NETSIG:728] Re: DCD mods?

From: dkelly@tomcat1.tbe.com (David Kelly)
Date: Sat, 14 Jan 95 18:01:34 -0600
To: netsig@tapr.org
Message-ID: <9501150001.AA13203@tomcat1.tbe.com>
Rendered body type: text/plain

> The XR2211 gives somewhat adequate DCD performance by itself, depending on
> the audio noise characteristics of the input signal (for fm receiver vhf/uhf
> afsk). For HF (or if the unsquelched noise output triggers the DCD), the
> TAPR 2211 DCD kit is a very good low priced solution. It is a small board
> which plugs into the 2211 socket and the 2211 must be plugged into a socket
> on the DCD board. In most cases one external wire to the TNC board is also
> required. N7CL wrote some mods which improve the performance of the stock
> TNC in a PSR several years ago, but the DCD kit is even better,
>
> Bob
>
> -------
> Bob Nielsen   Internet: nielsen@primenet.com
> Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

Running from memory, it seems that if you remove the MF10 (and possibly
one of the component carriers), wire your signal thru the empty MF10
socket, and possibly change a series 1.0 uF cap to 0.1 uF, you can
improve VHF performance and sensitivity. Seems the 2211 will lock on
a wider range of signal amplitudes than the MF10 will accept. Also the
MF10 does such a fine job of filtering that most everything looks like
a signal to the 2211. Remove the MF10 and the 2211 functions pretty
well with an open squelch.

Best thing to do is add TAPR's DCD kit.

73,
--
David Kelly, N4HHE,   n4hhe@amsat.org,   dkelly@nebula.tbe.com
----
Did you know that if you took all the economists in the world and lined
them up end to end, they'd still point in the wrong direction?

113. Mail loops and other such stuff

From: n5lyt@tapr.org
Date: Sat, 14 Jan 1995 22:52:48 -0600 (CST)
To: netsig@tapr.org, bbssig@tapr.org
Message-ID: <m0rTMxN-0000zKC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

As I'm sure all of you have noticed we have been experiencing mail loops
on BBSSIG and NETSIG. We are trying to locate the culprit. Please bear
with us.

114. Re: [NETSIG:730] looping of messages

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sun, 15 Jan 1995 03:54:11 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501151154.DAA29062@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> I have received several message repeats today, only from this list, which
> show a from: line rewritten as the <original originator>@phx-az.com. Is any
> one else getting these or know where the problem is (somewhere in Phoenix)?

I received around 50 dupes, now that I think about it. I thought some of
these posts looked familiar :-)

115. Re: [NETSIG:695] Docs for X1J?

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sun, 15 Jan 1995 07:16:47 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950115071536.13002A-100000@kazak>
Rendered body type: text/plain

On Sat, 14 Jan 1995 rick_whiting@atk.com wrote:

> From: "Rick Whiting" <Rick_Whiting@ATK.COM>
> To: netsig@tapr.org
> Date: Thu, 12 Jan 95 17:25 CST
> Subject: [NETSIG:671] Docs for X1J?
>
>   Subject: Time:5:10 PM
>   OFFICE MEMO   Docs for X1J?   Date:1/12/95
>
> Where (ftp site) is documentation for X1J nodes?
>
> 73/Rick W0TN
>
>
>

        FTP to ftp.ucsd.edu and in the packet/thenet directory d/l x1j.zip.


```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

116. Re: [NETSIG:727] Re: DCD mods?

From: rdonnell@eskimo.com (Robert B. Donnell - KD7NM)
Date: Sun, 15 Jan 1995 18:00:38 -0800
To: netsig@tapr.org
Message-ID: <6DT6lWml1a90064yn@eskimo.com>
Rendered body type: text/plain

> *** David Kelly tapped ....:
> > > What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> > > equivelent. Are there mod circuits available somewhere?
> > > Marvin - WB6PKK
> >
> > TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works
> > pretty good. Highly recomended.
> >
>
> How does this improve on the existing DCD in the 1270 ? are there
> details of the circuit design available ?
>
> Rob
>

> --
> rob mayfield asc p/l box 73 oaklands park   mayfield@itd.adelaide.edu.au
> vk5xxx@vk5xxx.#adl.#sa.aus.oc   I am the dreamer ...
> http://wattle.itd.adelaide.edu.au/~mayfield   ... you are the dream
>
>

The TAPR 'True DCD' kit is based on an article by Eric Gustafson, N7CL.
The circuit looks at the data stream coming from the modem and detects
data transitions synchronized to the baud rate in use.

When noise is present at the input of the modems used commonly for 300,
1200, and 9600 baud operations the data output is not synchronized to
the baud rate being used, the True DCD circuit detects this condition
and sets its DCD output false.

When modem output is synchronous and at the correct baud rate then the
True DCD circuit sets its DCD output true.

This allows the use of unsquelched audio from the receiver, with the
advantage of removing the delay in detecting presence of another packet
transmission that is caused by the radio's squelch circuit. The direct
benifit is the reduction in collisions. A side benifit is that all
users on the channel may be able to reduce the amount of time wasted at
the beginning of each packet sending flags, i.e. the TXDELAY value can
be reduced.

Hope this helps.

73, Bob, KD7NM

117. Lost messages on TAPR mailing lists

From: lcz@datapoint.com (Lee Ziegenhals)
Date: Mon, 16 Jan 1995 18:46:39 -0600 (CST)
Message-ID: <m0rU24F-0000jlC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

We apologize for any lost mail to this mailing list during the past
24 hours. We have been making changes to the software. Doing this
while trying to keep my full-time employer happy prevented me from
testing the changes sufficiently.

Lee, N5LYT

118. TNC selection

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
Date: Tue, 17 Jan 1995 10:10 EST
To: netsig@tapr.org
Message-ID: <m0rUFai-000L5HC@mailgate.wpafb.af.mil>
Rendered body type: text/plain

Form: Memo
Text: (26 lines follow)
Net SIG Folks:

I am trying to make a decision on purchasing a TNC and would appreciate your
help. I am looking for a TNC that is KISS mode compatible, can access 1200
bps and 9600 bps packets, work with my homebuilt Ramsey 2M radio (currently
works with a 1200 bps BAYCOM-style modem and accepts direct modulation FM
packet, though it will probably need a deviation tune up before it will work
with 9600 bps) and is of reasonable (about $250) cost. I intend to use the
TNC to connect to the local TCP/IP packet network and use ETHRAX25 as a
driver for Windows Winsock applications.

There are several on the market which appear to meet these specifications
from MFJ, AEA, Pacomm, Kantronics, etc. I read an article in QST recently on
this, but it did not select a model as "best" and it didn't review the MFJ
TNC. Would you please post your opinion on what would be the "best" choice
in TNC, particularily if I didnt mention a brand of TNC. If the TNC is
available in kit form would be a plus. I am currently leaning towards the
MFJ, but dont feel I have enough real information to make a selection yet.
I appreciate your input. Thanks in advance,

73 de N8VEM

Andrew Lynch

alynch@wpdis01.wpafb.af.mil

Use Proportional Font: true
Attachment Count: 0

119. Re: [NETSIG:739] TNC selection

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 17 Jan 95 12:31:01 PST
To: netsig@tapr.org
Message-ID: <9501171231.ZM20181@hanko>
Rendered body type: text/plain

On Jan 17, 12:39pm, Andrew J. Lynch wrote:
> Subject: [NETSIG:739] TNC selection
> Form: Memo
> Text: (26 lines follow)
> Net SIG Folks:
>
> I am trying to make a decision on purchasing a TNC and would appreciate your
> help. I am looking for a TNC that is KISS mode compatible, can access 1200
> bps and 9600 bps packets, work with my homebuilt Ramsey 2M radio (currently
> works with a 1200 bps BAYCOM-style modem and accepts direct modulation FM
> packet, though it will probably need a deviation tune up before it will work
> with 9600 bps) and is of reasonable (about $250) cost. I intend to use the
> TNC to connect to the local TCP/IP packet network and use ETHRAX25 as a
> driver for Windows Winsock applications.
>
> There are several on the market which appear to meet these specifications
> from MFJ, AEA, Pacomm, Kantronics, etc. I read an article in QST recently on
> this, but it did not select a model as "best" and it didn't review the MFJ
> TNC. Would you please post your opinion on what would be the "best" choice
> in TNC, particularily if I didnt mention a brand of TNC. If the TNC is
> available in kit form would be a plus. I am currently leaning towards the
> MFJ, but dont feel I have enough real information to make a selection yet.
> I appreciate your input. Thanks in advance,

The kpc-9612 from Kantronics will run two radios at the same time,
one at 1200 and one at 9600. In other words, it is a full two
channel tnc, with one 1200 baud port and one 9600 baud port.

We have a fair number of them running in our network here in the Portland
area, and are very pleased with their performance, particularly
considering the low price.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

120. help

From: sysop@ham-med.irmkant.rm.cnr.it
Date: Wed, 18 Jan 95 10:13:33 UTC
To: netsig@tapr.org
Message-ID: <6868@ham-med.irmkant.rm.cnr.it>
Rendered body type: text/plain

I would like to subscribe your mailing list...Pse send me info about it...
                                        73 de Giuseppe ik0dje

121. More Jnos problems...HELP!

From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
Date: Wed, 18 Jan 95 7:58:08 EST
To: netsig@tapr.org
Message-ID: <9501181258.AA21380@pen1.pen.k12.va.us>
Rendered body type: text/plain

Hello again!
  I know everyone is probably sick of my hearing my problems
with Jnos, but if anyone can help, I would appreciate it.

  I am linking my system to the International Converse Bridge.
At times, there are in excess of 70 people on at one time.
When this happens, and I do a /W Q, the system freezes up and I
have to reset the system.

I also have problems with the link just droping as soon as a
user logs into converse if there has been no user for a while.

I am using Jnos 1.10h on a 286/16 and 1M of memory. There is
612k free when I start Jnos. Can anyone help?

Thanks, 73!
Mark, KE4MAA

--

_\\|//_
(` 0-0 ')
==========o00==(_)==00o==========
Mark Whittington | Co-SysOp, Outpost XIO BBS
Amateur Radio Operator KE4MAA, Tech. | Hampton, VA
mwhittin@pen.k12.va.us Internet | (804)850-0909
KE4MAA@N4HOG.VA.USA.NOAM AX.25 | Sysop: John Winsley
Power through Knowledge | FREE VALIDATION FIRST CALL!

==========

122. Re: [NETSIG:739] TNC selection

From: Donald Loughmiller <n7wol@beaker.cc.wwu.edu>

Date: Wed, 18 Jan 1995 12:38:50 -0800 (PST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9501181249.B23271-0100000@beaker.cc.wwu.edu>
Rendered body type: text/plain

Hi Andrew

Of the various brands of tncs I've had dealings with in setting up
and running I would NEVER buy a another mfj even at $1.00
they have the worst documentation several pots that takes scope to
keep in alignment and are extremly finicky as to who they will decode

Of all I've dealt with the best (my own opinion) 8-) is the tncs
that kantronics puts out thier docs are clear and straight foward
there is few adjustments if any ever needed they use very little power
and will run on most anything from 8 - 16 volts. We switched from
the mfjs on our bbs to the kpc-3 (1200 only) and have had no problems
please take this just as one persons opinion but I hope it helps

73's, Don Loughmiller, Bellingham, WA
[44.24.111.4] Whatcom County
Hm (360) 671-2487
AX.25 mail n7wol @ k7skw.WA.USA.NA
Ham TCP/IP n7wol@n7wol.ampr.org
uucp mail nyssa.wa7ipx.ampr.org

On Tue, 17 Jan 1995, Andrew J. Lynch wrote:

> Form: Memo
> Text: (26 lines follow)
> Net SIG Folks:
>
> I am trying to make a decision on purchasing a TNC and would appreciate your
> help. I am looking for a TNC that is KISS mode compatible, can access 1200
> bps and 9600 bps packets, work with my homebuilt Ramsey 2M radio (currently
> works with a 1200 bps BAYCOM-style modem and accepts direct modulation FM
> packet, though it will probably need a deviation tune up before it will work
> with 9600 bps) and is of reasonable (about $250) cost. I intend to use the
> TNC to connect to the local TCP/IP packet network and use ETHRAX25 as a
> driver for Windows Winsock applications.
>
> There are several on the market which appear to meet these specifications
> from MFJ, AEA, Pacomm, Kantronics, etc. I read an article in QST recently on
> this, but it did not select a model as "best" and it didn't review the MFJ
> TNC. Would you please post your opinion on what would be the "best" choice
> in TNC, particularily if I didnt mention a brand of TNC. If the TNC is
> available in kit form would be a plus. I am currently leaning towards the
> MFJ, but dont feel I have enough real information to make a selection yet.

> I appreciate your input. Thanks in advance,
>
> 73 de N8VEM
>
> Andrew Lynch
>
> alynch@wpdis01.wpafb.af.mil
>
> Use Proportional Font: true
> Attachment Count: 0
>

123. Syntor radios

From: Tim Baggett <tim@nmsu.edu>
Date: Wed, 18 Jan 1995 18:08:11 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.3.87.9501181811.B2618-0100000@wilma>
Rendered body type: text/plain

Does anyone have any information regarding the Motorola Syntor radios in 9600 packet? I have an offer for one, and I wonder if I can use it for packet. I haven't seen any specs on it yet. It is synthesized, so there are no crystals, ranges from 450-512 MHz and has 100 watts output (thats a lot for packet!). The model number is T74SRA 3D008K.

Thanks
Tim, AA5DF
tim@nmsu.edu

124. Re: TNC selection

From: imotion@iu.net (Howard Goldstein)
Date: Thu, 19 Jan 1995 11:12:45 -0500
To: netsig@tapr.org
Message-ID: <199501191621.LAA28862@bb.iu.net>
Rendered body type: text/plain

Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:

>Of the various brands of tncs I've had dealings with in setting up
>and running I would NEVER buy a another mfj even at $1.00
>they have the worst documentation several pots that takes scope to
>keep in alignment and are extremly finicky as to who they will decode

Yikes! Whatever gave you the idea you needed a scope to align the modem of any TAPR TNC-2 clone with the XR chipset??????

I fear CALIBRAT and RXCAL was all for naught :-(

Howie N2WX
imotion@iu.net

125. Re: [NETSIG:745] Re: TNC selection

From: tmoulton@ram.net
Date: Thu, 19 Jan 95 11:42:58 EST
To: netsig@tapr.org
Message-ID: <06198.15021573@RAMail>
Rendered body type: text/plain

>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>
>
>>Of the various brands of tncs I've had dealings with in setting up
>>and running I would NEVER buy a another mfj even at $1.00
>>they have the worst documentation several pots that takes scope to
>>keep in alignment and are extremly finicky as to who they will decode
>
>Yikes! Whatever gave you the idea you needed a scope to align the modem of
>any TAPR TNC-2 clone with the XR chipset??????
>
>I fear CALIBRAT and RXCAL was all for naught :-(
>
>Howie N2WX
>imotion@iu.net
>

Not to mention many people found it best to run without the Filter on the input... (esp when audio level can vary greatly...)

One other thing...

       KEEP THE DEVIATION AT 2.7KHZ to 3.1 KHZ

It can cause you to need as much as 20db more power due to the RX IF Filter
in the radios.

5Khz is great for Voice, but how many of us really have much energy at
2200hz?

tom

126. Son of X1J curious behaviour

From: n3fih@omni.voicenet.com (Terry Ryan)
Date: Thu, 19 Jan 1995 11:53:23 -0500
To: netsig@tapr.org
Message-ID: <9501191653.AC18479@omni.voicenet.com>
Rendered body type: text/plain

I'm still seeing the repeated response to a ping problem, and am attaching a
copy of the arp/route tables from the two nodes in our stack involved.

I (n3fih, 44.80.13.1) am coming in on MET03, and am PINGing
n3gir (44.80.13.2) who is on MET02

After initiating 1 ping to n3gir, I get continuous stream of
replies. n3gir's box returns only one reply, and I never
transmit anything after the first PING. (verified by watching
the trace screen). Replies eminate from the stack at the rate
of about 1 every 15 seconds for a few minutes.

I'm using the single-ip-address-per-stack scheme from the
X1JR2 manual. Internally, the nodes on the stack refer to
each other using a bogus address (44.128.0.sid) that is
never seen outside the stack. 44.80.128.5 is the internal
name for the MET03 aa3ch-5, .6 is for MET02 -6, and .7 for
the 19.2kb 440 METHS port aa3ch-7

I've tried both JNOS and TNOS, no diff. The machine I'm pinging
is running MSYS. I can sucessfully ping another MSYS machine,
(direct, not thru the stack), so I'm not inclined to blame MSYS.

```
------------------------------------------------------------
>From MET03 aa3ch-5 (145.01) (the machine I'm coming in on)
arp
MET03:AA3CH-5}
Destination       P hw-type Callsign   Mode  Timer
44.128.0.6          AX.25   AA3CH-6     DG
44.80.44.60       P AX.25   WJ3G        DG
44.128.0.7          AX.25   AA3CH-7     DG
44.80.13.1        P AX.25   N3FIH-4     DG
44.80.44.1          AX.25   N3ILL-1     DG

ipr
MET03:AA3CH-5}
Destination      Len  I/F     Gateway           Metric
44.80.13.2        32  Port 1  44.128.0.6
44.80.13.23       32  Port 0
44.80.44.0        24  Port 0  44.80.44.1
44.80.32.0        24  Port 0  44.80.44.1
44.80.13.0        24  Port 0
44.80.40.0        24  Port 1  44.128.0.6
44.80.24.0        24  Port 1  44.128.0.6
44.80.42.0        24  Port 1  44.128.0.6

------------------------------------------------------------

>From MET02 aa3ch-5 (223.44) (the node I reach n3gir thru)
arp
MET02:AA3CH-6}
Destination       P hw-type Callsign   Mode  Timer
44.80.13.10       P AX.25   AA3CH-2
44.128.0.7          AX.25   AA3CH-7
44.128.0.5          AX.25   AA3CH-5
44.80.42.2        P AX.25   WB3FQY-2
44.80.13.2        P AX.25   N3GIR-10
```

```
ipr
MET02:AA3CH-6}
Destination      Len  I/F     Gateway           Metric
44.80.13.2        32  Port 0
44.80.13.10       32  Port 0
44.80.44.0        24  Port 1  44.128.0.5
44.80.32.0        24  Port 1  44.128.0.5
44.80.13.0        24  Port 1  44.128.0.5
44.80.42.0        24  Port 0  44.80.42.2
44.80.40.0        24  Port 0  44.80.42.2
44.80.24.0        24  Port 0  44.80.42.2


******************************************************

what I get from trace is
(ax0) AA3CH-5->N3FIH-4 IP  n3gir->n3fih ICMP Echo Reply
0000  ....
(ax0) AA3CH-5->N3FIH-4 IP  n3gir->n3fih ICMP Echo Reply
0000  ....
(ax0) AA3CH-5->N3FIH-4 IP  n3gir->n3fih ICMP Echo Reply
0000  ....

...etc

Anybody??
------------------------------------------------------------------
                  Terry Ryan, N3FIH
            Ham: n3fih@n3nad.#epa.pa.usa.noam
            Internet: n3fih@omni.voicenet.com
                Compu$erve: 76070,1000
```

127. Re: [NETSIG:746] Re: TNC selection

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Thu, 19 Jan 1995 10:12:03 -0700
To: netsig@tapr.org
Message-ID: <199501191711.KAA05755@news.primenet.com>
Rendered body type: text/plain

```
>>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>>
>>
>>>Of the various brands of tncs I've had dealings with in setting up
>>>and running I would NEVER buy a another mfj even at $1.00
>>>they have the worst documentation several pots that takes scope to
>>>keep in alignment and are extremly finicky as to who they will decode
>>
>>Yikes!  Whatever gave you the idea you needed a scope to align the modem of
>>any TAPR TNC-2 clone with the XR chipset??????
>>
>>I fear CALIBRAT and RXCAL was all for naught :-(
>>
>>Howie N2WX
>>imotion@iu.net
>>
>
>Not to mention many people found it best to run without the Filter on the
>input... (esp when audio level can vary greatly...)

Actually MFJ (and I think PacComm) have left out the MF-10 filters for
several years.


>One other thing...
>
>       KEEP THE DEVIATION AT 2.7KHZ to 3.1 KHZ
>
>It can cause you to need as much as 20db more power due to the RX IF Filter
>in the radios.
>
>5Khz is great for Voice, but how many of us really have much energy at
>2200hz?

AMEN!

>
>
```

>tom

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

128. Mitrek Tranceivers

From: Jim Oty <joty@aoc.nrao.edu>
Date: Thu, 19 Jan 1995 14:02:12 -0700
To: netsig@tapr.org
Cc: joty
Message-ID: <199501192102.AA27979@zia.aoc.nrao.edu>
Rendered body type: text/plain

While looking for UHF Mitrek Tranceivers, a found a couple of units in a surplus store. I was sure that they were UHF models and picked up two of them. On closer inspection, they appear to be VHF models. The model number is : T43JJA1900CK. Could someone confirm what I have. Also where can I get manuals and crystal elements for these. The price was right so I will find some use for them (trading material????).

Jim, WB5GWH

129. Re: [NETSIG:747] Son of X1J curious behaviour

From: "Bob Merritt" <ka4byp@mail.radio.org>
Date: Thu, 19 Jan 1995 16:48:19 +0000
To: n3fih@omni.voicenet.com (Terry Ryan),
             netsig@tapr.org
Message-ID: <m0rV4iU-0001EZC@wa4mei.radio.org>
Rendered body type: text/plain

[stuff deleted]

> After initiating 1 ping to n3gir, I get continuous stream of
> replies. n3gir's box returns only one reply, and I never
> transmit anything after the first PING. (verified by watching
> the trace screen). Replies eminate from the stack at the rate
> of about 1 every 15 seconds for a few minutes.
[stuff deleted]
>
> I've tried both JNOS and TNOS, no diff. The machine I'm pinging
> is running MSYS. I can sucessfully ping another MSYS machine,
> (direct, not thru the stack), so I'm not inclined to blame MSYS.
>
It is the fault of the MSYS, we just went thru the same problems here locally when somebody brought up a new BBS. The fix is to explicitly make sure that in the ARP table for the X1J node that you're connecting thru, has it set for DG mode for that MSYS box.

At least that's all we did here to fix it. :) Maybe that will work for you. This is quite an irritating bug. Especially when several folks are testing to determine the problem and reply pings come back to everybody once every few seconds for 5 or 6 minutes from a single ping!

73/Bob ka4byp

Bob Merritt   ka4byp@mail.radio.org |work: 404-784-6320
PO Box 185 |home: 404-412-6237
Griffin, GA 30224 |data: 404-228-3953

130. Re: [NETSIG:745] Re: TNC selection

From: Rob <mayfield@guest.adelaide.edu.au>
Date: Fri, 20 Jan 1995 10:02:10 +1030 (CST)
To: netsig@tapr.org
Message-ID: <9501192332.AA09969@wattle.itd.adelaide.edu.au>
Rendered body type: text/plain

*** Howard Goldstein tapped ....:
> Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
> >Of the various brands of tncs I've had dealings with in setting up
> >and running I would NEVER buy a another mfj even at $1.00
> >they have the worst documentation several pots that takes scope to
> >keep in alignment and are extremly finicky as to who they will decode

I agree the dox arent real good, it took me 4 years to realise that it even

had a calset, because there were no details on the procedure in the manual
I got, and since I only ever use kiss, I'd never looked through the command
set where the obscure reference was :-)

> Yikes! Whatever gave you the idea you needed a scope to align the modem of
> any TAPR TNC-2 clone with the XR chipset??????

Agreed :-) I used to use a scope also, but the calset/calibra makes it
childs play to align tones, all but level.

> I fear CALIBRAT and RXCAL was all for naught :-(
Only if you dont inhale it :-)

73 ... Rob

--
rob mayfield asc p/l box 73 oaklands park   mayfield@itd.adelaide.edu.au
vk5xxx@vk5xxx.#adl.#sa.aus.oc   I am the dreamer ...
http://wattle.itd.adelaide.edu.au/~mayfield   ... you are the dream

131. Re: [NETSIG:745] Re: TNC selection

From: rmackay@bud.peinet.pe.ca (Ron VE1AIC)
Date: Thu, 19 Jan 1995 20:20:09 -0400
To: netsig@tapr.org
Message-ID: <9501200020.AA02359@bud.peinet.pe.ca>
Rendered body type: text/plain

>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>
>
>>Of the various brands of tncs I've had dealings with in setting up
>>and running I would NEVER buy a another mfj even at $1.00
>>they have the worst documentation several pots that takes scope to
>>keep in alignment and are extremly finicky as to who they will decode
>
>
Don either you got some real lemons from MFJ or else there are other
problems involved other than the tnc. I have 4 MFJ tnc's that have been
running for
years without any problems. ALL of them MFJ1270 ,1270B (2), 1274 are solid.
The 1270 has been on a VHF node for 7 years and the 1274 has been on 15m/20M
for almost 8 years non-stop.
As for alignment, well the schematics are a rather tiny but they are
readable and the Calibrate info is easy to follow...or so I found but then
I built a TAPR tnc2 so I had practise.
73 - Ron

132. Re: [NETSIG:746] Re: TNC selection

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Thu, 19 Jan 1995 16:27:49 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501200027.QAA10261@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> 5Khz is great for Voice, but how many of us really have much energy at
> 2200hz?

Sheesh!

So?

(No, this is not a flame - read on ;-)

Try saying these into a comm quality mic connected to an audio spectrum
analyzer. The >2200 hz content will definitely be there, and in
significant quantities!

"SH" is natures way of making pink noise (equal energy per octave). "S"
is a nice white noise generator (equal energy per Hz, which gives double
the energy in each ascending octave.)

Voice with little content other than fundamental vocal cord frequencies
is unintelligible. And sometimes with all the frequencies, it still is.

And sometimes I don't have much energy at ANY frequency :-)

 -- mike curtis
wd6ehr@kaiwan.com

133. Re: [NETSIG:744] Syntor radios

From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Thu, 19 Jan 95 18:29:31 CST
To: netsig@tapr.org
Message-ID: <9501200029.AA150815@tcet.unt.edu>
Rendered body type: text/plain

Tim: There are some ROSE folks using some for a link into Shreveport
from Dallas at 9600. I have one of the units from that same surplus
batch that will be put to use on a TexNet-DFW BBS backbone network when
I get some other projects out of the way. The radio belongs to N5VGC
and I haven't yet started checking it out. It will run at 1200 baud.

You might get in touch with N5BCA at his callbook address (don't know if
he has an e-mail address...) to see what mods were performed on the
radios they have in service on 9600. N5BCA goes by his middle name
(Tom), not the first name you'll find in the callbook listing, fyi.

Best 73 de Dave
Lemme know if you decide to pick up the radio and what kind of luck you
have with it. Only bugaboo is getting the thing re-prommed for the ham
freqs, as I understand it.

134. BPQ curious beaviour

From: Richard.Saue@jur.uib.no (Richard Saue)
Date: Fri, 20 Jan 1995 07:37:39 +0000
To: netsig@tapr.org
Message-ID: <v01510108ab4525d60c6d@[129.177.155.182]>
Rendered body type: text/plain

Hi!

I am relaying a request from our local sysop LA6CU, Per, regaring curious BPQ
beaviour. I will inform him about any reply on this request....

73 de Richard - LA4SGA @ LA1B

****

LA6CU:

On LA1B club-station we are using DesqView to multitask an FBB BBS and a
Packclus Packet Cluster in the same '486 PC. We use BPQ 4.08 as a driver for
both applications, and via a DRSI-card to the radios. All seems to work fine,
after a long time of optimizing (hi), except for two BIG and annoying problems:

1:
If the traffic is heavy, or link not-so-good, between BPQ and our local TheNet
node, BPQ sometimes gets confused and sends the same frames over-and-over again,
even if I can see in the monitor-window that the frames HAVE been ack'ed (and as
'I' can see them in the monitor-window of FBB, so can BPQ, hi). BPQ may send the
SAME frame (with same frame-number) several times in the same transmission. And
the same transmission may be repeated many times ! So it wastes a lot of
time.....

2:
When a user reads mail, or downloads files from the BBS (via the TheNet-node and
BPQ) the flow of frames may suddenly stop. Sometimes it will be resumed, other
times it will not. But if the user sends an ENTER, the flow resumes at once.
This is not normal, and very annoying.
Can anybody help ?

73 de Per, LA6CU @ LA6CU.BRG.R.NOR.EU

135. Re: [NETSIG:753] Re: TNC selection

From: tmoulton@ram.net
Date: Fri, 20 Jan 95 06:41:29 EST
To: netsig@tapr.org
Message-ID: <06203.15021573@RAMail>
Rendered body type: text/plain

>From: netsig@tapr.org (netsig (tapr))
>Date: Thu, 19 Jan 95 22:57 CST
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>Subject: [NETSIG:753] Re: TNC selection

>
>>
>> 5Khz is great for Voice, but how many of us really have much energy at
>> 2200hz?
>
>Sheesh!
>
>So?
>
>(No, this is not a flame - read on ;-)
>
>Try saying these into a comm quality mic connected to an audio spectrum
>analyzer. The >2200 hz content will definitely be there, and in
>significant quantities!
>
>"SH" is natures way of making pink noise (equal energy per octave). "S"
>is a nice white noise generator (equal energy per Hz, which gives double
>the energy in each ascending octave.)
>
>Voice with little content other than fundamental vocal cord frequencies
>is unintelligible. And sometimes with all the frequencies, it still is.
>
>And sometimes I don't have much energy at ANY frequency :-)
>
> -- mike curtis
>wd6ehr@kaiwan.com

I am no audio expert, but bell 202 modem signals have 50% of the power at
2200 plus sidebands. That is for stream of zero's a stream of 1's could have
much more... i guess over a few bytes of data it still sits at 50% due to
zero insertion.

BUT! when the voice radio clips the higher stuff our ears don't care, but a
modem does, since the lost energy is Distortion

a signal that is too wide for your receiver has a low frequency hash that
hurts your ears to listen to.

The seat of the pants way I tell people to adjust the audio level is to turn
it down until the level drops and then keep going until there is a hollow
sound to the tones. That hollow sound the the lack of noise between 1200 and
2200 as well as below 1200 where we expect noise always to be

this is one of the hardest things to expplain without audio...

tom

136. Re: [NETSIG:754] Re: Syntor radios

From: tmoulton@ram.net
Date: Fri, 20 Jan 95 06:43:22 EST
To: netsig@tapr.org
Message-ID: <06204.15021573@RAMail>
Rendered body type: text/plain

try n5bca@wb5cqu.ampr.org

tom

137. Re: [NETSIG:750] Re: Son of X1J curious behaviour

From: mfoster@amoco.com (Michael H. Foster)
Date: Fri, 20 Jan 95 09:41:05 CST
To: netsig@tapr.org
Message-ID: <199501201541.AA12269@interlock.amoco.com>
Rendered body type: text/plain

Bob Merritt wrote:

It is the fault of the MSYS, we just went thru the same problems here
locally when somebody brought up a new BBS.   The fix is to
explicitly make sure that in the ARP table for the X1J node that
you're connecting thru, has it set for DG mode for that MSYS box.

At least that's all we did here to fix it. :) Maybe that will work
for you. This is quite an irritating bug.   Especially when several
folks are testing to determine the problem and reply pings come back
to everybody once every few seconds for 5 or 6 minutes from a single
ping!

----- End Included Message -----

I am coming in late on this...Bob you seem to be saying you fixed the
problem by making an arp entry into the x1j. I noted last night while
helping a new user get on to an x1j that had no local user arps and basic
routing between two other nodes with something like:
iproute 44.78/16 . With no arp entry for the new user,
a ping bounced around like crazy until it expired.

So what exactly was the "fault of the MSYS"?

mike wa5txx
mfoster@trc.amoco.com

138. Re: [NETSIG:747] Son of X1J curious behaviour

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 20 Jan 1995 11:43:33 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950120113946.17335A-100000@kazak>
Rendered body type: text/plain

On Thu, 19 Jan 1995, Terry Ryan wrote:

> I'm still seeing the repeated response to a ping problem, and am attaching a
> copy of the arp/route tables from the two nodes in our stack involved.
>
> Anybody??
> --
>   Terry Ryan, N3FIH
>   Ham: n3fih@n3nad.#epa.pa.usa.noam
>   Internet: n3fih@omni.voicenet.com
>   Compu$erve: 76070,1000
>
>

        Terry you need to make your Broadcast IP number 255.255.255.255
and then make sure you can ping the x1j node. Then you need BOTH a route
to the other node and what your missing A ROUTE BACK TO THE FIRST NODE!

        No-one said it was simple....:-)

```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

139. Motorola Info

From: "Ed Maling" <TEDHM@chevron.com>
Date: 20 Jan 95 10:46:14 PST
To: netsig@tapr.org
Message-ID: <HOVMB.TEDHM.0897.1995 0120 10 44 10 44>
Rendered body type: text/plain

To: OAS   --SSW1   OPEN ADDRESSING SE

FROM: Ed Maling
      Chevron Info Tech Co
      CSD - Tech Support
SUBJECT: Motorola Info

Gentlemen,
For Tim, aa5df:
Syntor UHF works well for me at 9600. Am not sure of the model # of
mine but it has plugging away for 3 yrs now w/o problems of any kind.
Dave Bray, n0its has schematics marked up for the mod; he can be
reached at dcbr@chevron.com.

For Jim, wb5gwh:
Mitrek model # t43xxxxxxxx is a 40w vhf unit. Manual part # is
68-P81045E70-O. Xtals can be had from: ICM at 800-725-1426 or
JAN at 800-JAN-XTAL. I've found ICM to put out a *very* high
quality product, they are aware of the value of their product.
For mountain-top use where temp fluctuations may be a concern
they are probably the best bet. If the units will be used in

a shack at the house (temp controlled environment) JAN will
probably be good enough. For a complete element I think ICM
was getting around $80, to re-xtal an existing element I think
it was in the neighborhood of $18 apiece.

73 de n7mlr

Ed Maling (801)789-9666 (VERUT3)
1275 E. Hwy 40 # 3
Vernal, Ut 84078-2830
edhm@chevron.com

140. TNC-2 Tuning

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 20 Jan 1995 12:21:20 -0700 (MST)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950120120743.17335D-100000@kazak>
Rendered body type: text/plain

I have never seen such a rash of mis-information in quite a long
time! It is amazing! I started tuning up tnc-2's about 1986 and have
always used the method provided by the TAPR manual. What I think is
happening is Hams are trying to tune up a tnc-2 (by MFJ or any other
name) with a The-Net program chip in place.

        To tune up a tnc-2 you should follow the book, step by step. Turn
the little dinky 25 turn pots past he proper setting and then come back.
Yes, I have tuned and tuned with no effect the wrong pot! The pot
controlling the receive phase lock loop is hard to get just right, but
that doesn't matter much anyway.

        I have MFJ TNC's at several sites. They are large and the early
ones have SLOW chips in them. But I will be glad to pay shipping for any
that you guys want to sell cheap. The New Mexico Network has MFJ's at
most sites today, that have been there for over 6 years! That is
reliability!

****
* 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
*   *
* The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
*   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
*   *
*   Electrical Engineer with the Army Research Laboratory   *
*   *
****

141. Re: TNC selection

From: jkbe@aluxs.att.com (John Bednar)
Date: Fri, 20 Jan 95 13:21:02 EST
To: netsig@tapr.org
Message-ID: <9501201821.AA01834@lena>
Rendered body type: text/plain

>>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>
>
>>Of the various brands of tncs I've had dealings with in setting up
>>and running I would NEVER buy a another mfj even at $1.00
>>they have the worst documentation several pots that takes scope to
>>keep in alignment and are extremly finicky as to who they will decode
>
>
>Don either you got some real lemons from MFJ or else there are other
>problems involved other than the tnc. I have 4 MFJ tnc's that have been
>running for
>years without any problems. ALL of them MFJ1270 ,1270B (2), 1274 are solid.
>The 1270 has been on a VHF node for 7 years and the 1274 has been on 15m/20M
>for almost 8 years non-stop.
>As for alignment, well the schematics are a rather tiny but they are
>readable and the Calibrate info is easy to follow...or so I found but then
>I built a TAPR tnc2 so I had practise.
>73 - Ron

I have owned both several MFJ, Kantronics, and PacComm TNC's and feel like
I must come to Don's defense. I prefer Kantronics documentation and
USER firmware over both MFJ and PacComm. As for 1200 baud demodulators,
the 3105 circuit (Kantronics & PacComm) appears to be more forgiving to

RX audio level and frequency response however, the MFJ demodulator when fed
with the proper audio will work with shorter TXD's. At 1200 baud, the
latter difference is insignificant when considering thruput (bytes/sec).

Summed up....
For a user station, Kantronics stands out.

For a network node TNC, I prefer to stay away from MFJ because of
tones drifting when the TNC is subjected to wide temperature swings,
the demodulator is cranky with the user's level & TX frequency response,
the cpu speed of 4.8MHz, and the RS232 rate being limited to 19.2 Kbaud.
PacComm adresses all these issues. Too bad their schematics are
below average.

John

142. more radio h/w info on N6GN WWW page

From: Glenn Elmore <glenne@tiger.sr.hp.com>
Date: Fri, 20 Jan 1995 12:48:59 -0800 (PST)
To: tcp-group@ucsd.edu (TCP Group), netsig@tapr.org (TAPR netsig)
Message-ID: <199501202048.AA016394939@tiger.sr.hp.com>
Rendered body type: text/plain

I've added some h/w information to the WWW page:

```
|--------------- N6GN's Higher Speed Packet WWW Page -------------------|
|                                                                        |
|       ftp://col.hp.com/hamradio/packet/n6gn/index.html                 |
|                                                                        |
|------------------------------------------------------------------------|
```

so that it now includes some descriptions, schematics, plots and such for
not only the original microwave data link but also for the 904 MHz radios
and "Layer 3 TNC" development.
  I'll not likely have much time to do anything about any of this in the
near future but it may still be of interest to some.

Glenn n6gn

143. Re: TNC Selection

From: WBRADFORD@delphi.com
Date: Fri, 20 Jan 1995 23:17:27 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HM353CZLV68YD7O5@delphi.com>
Rendered body type: text/plain

My experience with the MFJ TNC's has been excellent. Good thing my
desk is wood (knock knock, who's there, hopefully not the failure
spirit!). I have 12 1270 (various b,c) TNC's and all have performed
just fine except for some rare lightening hits at a 8700 ft. node
site. Audio and serial port chips smoke, otherwise OK.

I use them at my home station, but other TNC's might be better or
offer more features (So get lanlink etc.).

I need to say that I have had the Most Diffculty with Kantronics.
Three out of three, all junk, And Bad customer support and service
from the dealer. But the 1270c seems to me like a good choice.

Just one ham's experience.

73 Bill k7ea@wb7ulh.ut   wbradford@delphi.com

144. TNC2118A

From: RDAI@delphi.com
Date: Sat, 21 Jan 1995 00:16:45 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HM375LK3S8915G9S@delphi.com>
Rendered body type: text/plain

Hello NETSIG,

While this may not exactly be a networking issue, I'm hoping that
someone here may shed a lil light on my problem.
 I am trying to replace the standard eprom in my 1270b with the
TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is

currently using 1.1.3 firmware. I believe it is a 16k ram unit.

I file-requested the code from tapr.org, and blew the eprom. But
the tnc just sits with the STA & CON leds lit when I installed it.
Should it work? Does the tnc require any additional modifications
(i.e. 32k ram)? Any help would be appreciated.

Thanks,

KA8OKH (rdai@delphi.com)
------

145. Re: [NETSIG:765] TNC2118A

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Sat, 21 Jan 1995 00:48:57 -0700
To: netsig@tapr.org
Message-ID: <199501210748.AAA25842@news.primenet.com>
Rendered body type: text/plain

Yes, versions later than 1.1.4 or 1.1.5 (I think TAPR changed one version
before MFJ) require 32k of RAM. It's fairly easy, just replace the two 8k
chips with a single 32k chip and change a jumper. The TAPR office still has
the chips available, as well as the mod instructions ($20 -10% if you are a
member plus $2 for shipping).

Bob

>
>Hello NETSIG,
>
>While this may not exactly be a networking issue, I'm hoping that
>someone here may shed a lil light on my problem.
> I am trying to replace the standard eprom in my 1270b with the
>TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
>currently using 1.1.3 firmware. I believe it is a 16k ram unit.
>
>I file-requested the code from tapr.org, and blew the eprom. But
>the tnc just sits with the STA & CON leds lit when I installed it.
>Should it work? Does the tnc require any additional modifications
>(i.e. 32k ram)? Any help would be appreciated.
>
>Thanks,
>
>----------
>KA8OKH (rdai@delphi.com)
>------
>
>

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

146. Re: [NETSIG:765] TNC2118A

From: zephd@iquest.net (David Zeph)
Date: Sat, 21 Jan 95 04:09 EST
To: netsig@tapr.org
Message-ID: <m0rVbpK-000E0VC@dorite.use.com>
Rendered body type: text/plain

If my memory is correct, V1.1.6 was the last with two versions one for 16Kb
and another for 32Kb SRAMs. With V1.1.7 onwards you had to upgrade to the
32K SRAM.

73 ---> Dave, W9ZRX   (zephd@iquest.net)

>
>Hello NETSIG,
>
>While this may not exactly be a networking issue, I'm hoping that
>someone here may shed a lil light on my problem.
> I am trying to replace the standard eprom in my 1270b with the
>TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
>currently using 1.1.3 firmware. I believe it is a 16k ram unit.
>
>I file-requested the code from tapr.org, and blew the eprom. But
>the tnc just sits with the STA & CON leds lit when I installed it.

>Should it work? Does the tnc require any additional modifications
>(i.e. 32k ram)? Any help would be appreciated.
>
>Thanks,
>
>----------
>KA8OKH (rdai@delphi.com)
>------
>
>

147. Re: [NETSIG:749] Mitrek Tranceivers

From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Sat, 21 Jan 95 10:01:37 CST
To: netsig@tapr.org
Message-ID: <9501211601.AA100208@tcet.unt.edu>
Rendered body type: text/plain

A source of manuals, accessories is
CW Wolfe Communications (no relation...)
phone: 406-252-9220
fax: 406-252-9617

Dave Wolf WO5H

148. Anyone Got the IC3200 on 96k

From: wx7y@egate.nc7f.ampr.org
Date: Sat, 21 Jan 95 11:29:37 mdt
To: netsig@tapr.org
Message-ID: <176@egate.nc7f.ampr.org>
Rendered body type: text/plain

Im interested to see if anyone has been able to get the icom-3200a Radio to
work on 9600 baud I have done some expermenting and noticed that there is
not quite enough band width without removing some of the circutry, I would still like to have the use of
 the radio for voice an
sd 1200 baud packet so if
anyone has had any success please let me know 73 de Bret WX7Y
Bret Mills
801-748-5026 Hm
wx7y@egate.nc7f.ampr.org

149. Re: [NETSIG:765] TNC2118A

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 21 Jan 1995 13:41:32 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199501211941.NAA07646@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

1.1.8a and now 1.1.9 requires that the TNC have 32K of SRAM.

Greg

According to RDAI@delphi.com:
>
>
> Hello NETSIG,
>
> While this may not exactly be a networking issue, I'm hoping that
> someone here may shed a lil light on my problem.
> I am trying to replace the standard eprom in my 1270b with the
> TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
> currently using 1.1.3 firmware. I believe it is a 16k ram unit.
>
> I file-requested the code from tapr.org, and blew the eprom. But
> the tnc just sits with the STA & CON leds lit when I installed it.
> Should it work? Does the tnc require any additional modifications
> (i.e. 32k ram)? Any help would be appreciated.
>
> Thanks,
>
> ----------
> KA8OKH (rdai@delphi.com)
> ------
>

150. Re: TNC2118A

From: WBRADFORD@delphi.com
Date: Sat, 21 Jan 1995 21:48:12 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HM4G9YD6Z6916HLL@delphi.com>
Rendered body type: text/plain

The jumper to enable memory increase from 16 to 32k is jmp # 12.

But be careful. Some of the 1270 pc boards from that era do not
match the parts layout as described in the book.

Trace the pc board and verify with the schematic that the 'jumper'
really connects to the right pins on U12. The jumper will probably
have to be changed via soldering iron.

73 Bill k7ea@wb7ulh.ut.usa.na   wbradford@delphi.com

151. [NETSIG:746] Re: TNC selection

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Thu, 19 Jan 1995 10:56:00 GMT
To: netsig@tapr.org
Message-ID: <950122160603298@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Thu, 19 Jan 95 10:56 CST
Subject: [NETSIG:746] Re: TNC selection

>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>
>
>>Of the various brands of tncs I've had dealings with in setting up
>>and running I would NEVER buy a another mfj even at $1.00
>>they have the worst documentation several pots that takes scope to
>>keep in alignment and are extremly finicky as to who they will decode
>
>Yikes! Whatever gave you the idea you needed a scope to align the modem of
>any TAPR TNC-2 clone with the XR chipset??????
>
>I fear CALIBRAT and RXCAL was all for naught :-(
>
>Howie N2WX
>imotion@iu.net
>

Not to mention many people found it best to run without the Filter on the
input... (esp when audio level can vary greatly...)

One other thing...

       KEEP THE DEVIATION AT 2.7KHZ to 3.1 KHZ

It can cause you to need as much as 20db more power due to the RX IF Filter
in the radios.

5Khz is great for Voice, but how many of us really have much energy at
2200hz?

tom

152. [NETSIG:757] Re: Syntor radios

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Fri, 20 Jan 1995 06:01:00 GMT
To: netsig@tapr.org
Message-ID: <950122160605309@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Fri, 20 Jan 95 06:01 CST
Subject: [NETSIG:757] Re: Syntor radios

try n5bca@wb5cqu.ampr.org

tom

153. [NETSIG:741] help

From: sysop@ham-med.irmkant.rm.cnr.it (Sysop@ham-med.irmkant.rm.cnr.it)
Date: Wed, 18 Jan 1995 03:36:00 GMT
To: netsig@tapr.org
Message-ID: <950122160601293@phx-az.com>
Rendered body type: text/plain

From: sysop@ham-med.irmkant.rm.cnr.it
To: netsig@tapr.org
Date: Wed, 18 Jan 95 03:36 CST
Subject: [NETSIG:741] help

I would like to subscribe your mailing list...Pse send me info about it...
73 de Giuseppe ik0dje

154. [NETSIG:734] Mail loops and other such stuff

From: n5lyt@tapr.org (N5lyt@tapr.org)
Date: Sat, 14 Jan 1995 22:54:00 GMT
To: netsig@tapr.org
Message-ID: <950122160559283@phx-az.com>
Rendered body type: text/plain

From: n5lyt@tapr.org
To: netsig@tapr.org
Date: Sat, 14 Jan 95 22:54 CST
Subject: [NETSIG:734] Mail loops and other such stuff

As I'm sure all of you have noticed we have been experiencing mail loops
on BBSSIG and NETSIG. We are trying to locate the culprit. Please bear
with us.

155. Loops

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Mon, 16 Jan 1995 02:55:19 GMT
To: netsig@tapr.org
Message-ID: <950122160600289@phx-az.com>
Rendered body type: text/plain

Hi All,
My system just recently began servicing a new domain, and
ufortunately unbeknownst to me, there was a problem with the spooler
and it was regenerating anything coming in from Listservs. This problem
has been corrected and I offer my appologies for any inconvenience that
this may have caused to your list.

Daniel J. Meredith
Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM

156. Loops

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Mon, 16 Jan 1995 02:55:19 GMT
To: netsig@tapr.org
Message-ID: <950122160600286@phx-az.com>
Rendered body type: text/plain

Hi All,
    My system just recently began servicing a new domain, and
ufortunately unbeknownst to me, there was a problem with the spooler
and it was regenerating anything coming in from Listservs. This problem
has been corrected and I offer my appologies for any inconvenience that
this may have caused to your list.

Daniel J. Meredith
Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM

157. Loops

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Mon, 16 Jan 1995 02:55:19 GMT
To: netsig@tapr.org
Message-ID: <950122160600287@phx-az.com>
Rendered body type: text/plain

Hi All,
    My system just recently began servicing a new domain, and
ufortunately unbeknownst to me, there was a problem with the spooler
and it was regenerating anything coming in from Listservs. This problem
has been corrected and I offer my appologies for any inconvenience that
this may have caused to your list.

Daniel J. Meredith
Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM

158. [NETSIG:738] Lost messages on TAPR mailing lists

From: lee.ziegenhals@phx-az.com (Lee Ziegenhals)
Date: Mon, 16 Jan 1995 19:36:00 GMT
To: netsig@tapr.org
Message-ID: <950122160601290@phx-az.com>
Rendered body type: text/plain

From: lcz@datapoint.com (Lee Ziegenhals)
To: netsig@tapr.org
Date: Mon, 16 Jan 95 19:36 CST
Subject: [NETSIG:738] Lost messages on TAPR mailing lists

We apologize for any lost mail to this mailing list during the past
24 hours. We have been making changes to the software. Doing this
while trying to keep my full-time employer happy prevented me from
testing the changes sufficiently.

Lee, N5LYT

159. [NETSIG:735] Re: looping of messages

From: wd6ehr@kaiwan.com (Wd6ehr@kaiwan.com)
Date: Sun, 15 Jan 1995 05:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160559284@phx-az.com>
Rendered body type: text/plain

From: Mike Curtis <wd6ehr@kaiwan.com>
To: netsig@tapr.org
Date: Sun, 15 Jan 95 05:59 CST
Subject: [NETSIG:735] Re: looping of messages

>
> I have received several message repeats today, only from this list, which
> show a from: line rewritten as the <original originator>@phx-az.com. Is any
> one else getting these or know where the problem is (somewhere in Phoenix)?

I received around 50 dupes, now that I think about it. I thought some of
these posts looked familiar :-)

160. [NETSIG:744] Syntor radios

From: tim@nmsu.edu (Tim@nmsu.edu)
Date: Wed, 18 Jan 1995 19:42:00 GMT
To: netsig@tapr.org
Message-ID: <950122160602296@phx-az.com>
Rendered body type: text/plain

From: Tim Baggett <tim@nmsu.edu>
To: netsig@tapr.org
Date: Wed, 18 Jan 95 19:42 CST
Subject: [NETSIG:744] Syntor radios

Does anyone have any information regarding the Motorola Syntor radios in
9600 packet? I have an offer for one, and I wonder if I can use it for
packet. I haven't seen any specs on it yet. It is synthesized, so there
are no crystals, ranges from 450-512 MHz and has 100 watts output (thats
a lot for packet!). The model number is T74SRA 3D008K.

Thanks
Tim, AA5DF
tim@nmsu.edu

161. [NETSIG:748] Re: TNC selection

From: bob.nielsen@phx-az.com (Bob Nielsen)
Date: Thu, 19 Jan 1995 11:21:00 GMT
To: netsig@tapr.org
Message-ID: <950122160603299@phx-az.com>
Rendered body type: text/plain

From: nielsen@PrimeNet.Com (Bob Nielsen)
To: netsig@tapr.org
Date: Thu, 19 Jan 95 11:21 CST

Subject: [NETSIG:748] Re: TNC selection

>>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>>
>>
>>>Of the various brands of tncs I've had dealings with in setting up
>>>and running I would NEVER buy a another mfj even at $1.00
>>>they have the worst documentation several pots that takes scope to
>>>keep in alignment and are extremly finicky as to who they will decode
>>
>>Yikes! Whatever gave you the idea you needed a scope to align the modem of
>>any TAPR TNC-2 clone with the XR chipset??????
>>
>>I fear CALIBRAT and RXCAL was all for naught :-(
>>
>>Howie N2WX
>>imotion@iu.net
>>
>
>Not to mention many people found it best to run without the Filter on the
>input... (esp when audio level can vary greatly...)

Actually MFJ (and I think PacComm) have left out the MF-10 filters for
several years.

>One other thing...
>
>   KEEP THE DEVIATION AT 2.7KHZ to 3.1 KHZ
>
>It can cause you to need as much as 20db more power due to the RX IF Filter
>in the radios.
>
>5Khz is great for Voice, but how many of us really have much energy at
>2200hz?

AMEN!

>
>
>tom

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

162. [NETSIG:732] Re: DCD mods?

From: wd6ehr@kaiwan.com (Wd6ehr@kaiwan.com)
Date: Sat, 14 Jan 1995 18:12:00 GMT
To: netsig@tapr.org
Message-ID: <950122160558280@phx-az.com>
Rendered body type: text/plain

From: Mike Curtis <wd6ehr@kaiwan.com>
To: netsig@tapr.org
Date: Sat, 14 Jan 95 18:12 CST
Subject: [NETSIG:732] Re: DCD mods?

>
> What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> equivelent. Are there mod circuits available somewhere?
> Marvin - WB6PKK
>

The 1270 will work with open squelch if you set it per the manual - DCD
flashes about 10% of the time. However, for "true" DCD operation, get
the TAPR kit (about $10 or $15) for the XR chipset.

-- mike curtis
wd6ehr@kaiwan.com

163. [NETSIG:749] Mitrek Tranceivers

From: joty@aoc.nrao.edu (Joty@aoc.nrao.edu)
Date: Thu, 19 Jan 1995 18:04:00 GMT
To: netsig@tapr.org
Message-ID: <950122160603301@phx-az.com>

Rendered body type: text/plain

From: Jim Oty <joty@aoc.nrao.edu>
To: netsig@tapr.org
Date: Thu, 19 Jan 95 18:04 CST
Subject: [NETSIG:749] Mitrek Tranceivers

While looking for UHF Mitrek Tranceivers, a found a couple of
units in a surplus store. I was sure that they were UHF models
and picked up two of them. On closer inspection, they appear to
be VHF models. The model number is : T43JJA1900CK. Could someone
confirm what I have. Also where can I get manuals and crystal
elements for these. The price was right so I will find some use
for them (trading material????).

Jim, WB5GWH

164. [NETSIG:745] Re: TNC selection

From: howard.goldstein@phx-az.com (Howard Goldstein)
Date: Thu, 19 Jan 1995 10:34:00 GMT
To: netsig@tapr.org
Message-ID: <950122160602297@phx-az.com>
Rendered body type: text/plain

From: imotion@iu.net (Howard Goldstein)
To: netsig@tapr.org
Date: Thu, 19 Jan 95 10:34 CST
Subject: [NETSIG:745] Re: TNC selection

Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:

>Of the various brands of tncs I've had dealings with in setting up
>and running I would NEVER buy a another mfj even at $1.00
>they have the worst documentation several pots that takes scope to
>keep in alignment and are extremly finicky as to who they will decode

Yikes! Whatever gave you the idea you needed a scope to align the modem of
any TAPR TNC-2 clone with the XR chipset??????

I fear CALIBRAT and RXCAL was all for naught :-(

Howie N2WX
imotion@iu.net

165. [NETSIG:751] Re: TNC selection

From: mayfield@guest.adelaide.edu.au (Mayfield@guest.adelaide.edu.au)
Date: Thu, 19 Jan 1995 18:10:00 GMT
To: netsig@tapr.org
Message-ID: <950122160604302@phx-az.com>
Rendered body type: text/plain

From: Rob <mayfield@guest.adelaide.edu.au>
To: netsig@tapr.org
Date: Thu, 19 Jan 95 18:10 CST
Subject: [NETSIG:751] Re: TNC selection

*** Howard Goldstein tapped ....:
> Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
> >Of the various brands of tncs I've had dealings with in setting up
> >and running I would NEVER buy a another mfj even at $1.00
> >they have the worst documentation several pots that takes scope to
> >keep in alignment and are extremly finicky as to who they will decode

I agree the dox arent real good, it took me 4 years to realise that it even
had a calset, because there were no details on the procedure in the manual
I got, and since I only ever use kiss, I'd never looked through the command
set where the obscure reference was :-)

> Yikes! Whatever gave you the idea you needed a scope to align the modem of
> any TAPR TNC-2 clone with the XR chipset??????

Agreed :-) I used to use a scope also, but the calset/calibra makes it
childs play to align tones, all but level.

> I fear CALIBRAT and RXCAL was all for naught :-(
Only if you dont inhale it :-)

73 ... Rob

--
rob mayfield asc p/l box 73 oaklands park mayfield@itd.adelaide.edu.au
vk5xxx@vk5xxx.#adl.#sa.aus.oc I am the dreamer ...
http://wattle.itd.adelaide.edu.au/~mayfield ... you are the dream

166. [NETSIG:736] Re: Docs for X1J?

From: k5di@kazak.nmsu.edu (K5di@kazak.nmsu.edu)
Date: Sun, 15 Jan 1995 08:22:00 GMT
To: netsig@tapr.org
Message-ID: <950122160559285@phx-az.com>
Rendered body type: text/plain

From: Klarsen <k5di@kazak.NMSU.Edu>
To: netsig@tapr.org
Date: Sun, 15 Jan 95 08:22 CST
Subject: [NETSIG:736] Re: Docs for X1J?

On Sat, 14 Jan 1995 rick_whiting@atk.com wrote:

> From: "Rick Whiting" <Rick_Whiting@ATK.COM>
> To: netsig@tapr.org
> Date: Thu, 12 Jan 95 17:25 CST
> Subject: [NETSIG:671] Docs for X1J?
>
> Subject: Time:5:10 PM
> OFFICE MEMO Docs for X1J? Date:1/12/95
>
> Where (ftp site) is documentation for X1J nodes?
>
> 73/Rick W0TN
>
>
>

FTP to ftp.ucsd.edu and in the packet/thenet directory d/l x1j.zip.

```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

167. [NETSIG:739] TNC selection

From: andrew.j..lynch@phx-az.com (Andrew J. Lynch)
Date: Tue, 17 Jan 1995 12:40:00 GMT
To: netsig@tapr.org
Message-ID: <950122160601291@phx-az.com>
Rendered body type: text/plain

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
To: netsig@tapr.org
Date: Tue, 17 Jan 95 12:40 CST
Subject: [NETSIG:739] TNC selection

Form: Memo
Text: (26 lines follow)
Net SIG Folks:

I am trying to make a decision on purchasing a TNC and would appreciate your help. I am looking for a TNC that is KISS mode compatible, can access 1200 bps and 9600 bps packets, work with my homebuilt Ramsey 2M radio (currently works with a 1200 bps BAYCOM-style modem and accepts direct modulation FM packet, though it will probably need a deviation tune up before it will work with 9600 bps) and is of reasonable (about $250) cost. I intend to use the TNC to connect to the local TCP/IP packet network and use ETHRAX25 as a driver for Windows Winsock applications.

There are several on the market which appear to meet these specifications from MFJ, AEA, Pacomm, Kantronics, etc. I read an article in QST recently on this, but it did not select a model as "best" and it didn't review the MFJ

TNC. Would you please post your opinion on what would be the "best" choice
in TNC, particularily if I didnt mention a brand of TNC. If the TNC is
available in kit form would be a plus. I am currently leaning towards the
MFJ, but dont feel I have enough real information to make a selection yet.
I appreciate your input. Thanks in advance,

73 de N8VEM

Andrew Lynch

alynch@wpdis01.wpafb.af.mil

Use Proportional Font: true
Attachment Count: 0

168. [NETSIG:753] Re: TNC selection

From: wd6ehr@kaiwan.com (Wd6ehr@kaiwan.com)
Date: Thu, 19 Jan 1995 22:57:00 GMT
To: netsig@tapr.org
Message-ID: <950122160604305@phx-az.com>
Rendered body type: text/plain

From: Mike Curtis <wd6ehr@kaiwan.com>
To: netsig@tapr.org
Date: Thu, 19 Jan 95 22:57 CST
Subject: [NETSIG:753] Re: TNC selection

>
> 5Khz is great for Voice, but how many of us really have much energy at
> 2200hz?

Sheesh!

So?

(No, this is not a flame - read on ;-)

Try saying these into a comm quality mic connected to an audio spectrum
analyzer. The >2200 hz content will definitely be there, and in
significant quantities!

"SH" is natures way of making pink noise (equal energy per octave). "S"
is a nice white noise generator (equal energy per Hz, which gives double
the energy in each ascending octave.)

Voice with little content other than fundamental vocal cord frequencies
is unintelligible. And sometimes with all the frequencies, it still is.

And sometimes I don't have much energy at ANY frequency :-)

 -- mike curtis
wd6ehr@kaiwan.com

169. [NETSIG:742] More Jnos problems...HELP!

From: mark.christopher.whittington@phx-az.com (Mark Christopher Whittington)
Date: Wed, 18 Jan 1995 07:11:00 GMT
To: netsig@tapr.org
Message-ID: <950122160601294@phx-az.com>
Rendered body type: text/plain

From: mwhittin@pen.k12.va.us (Mark Christopher Whittington)
To: netsig@tapr.org
Date: Wed, 18 Jan 95 07:11 CST
Subject: [NETSIG:742] More Jnos problems...HELP!

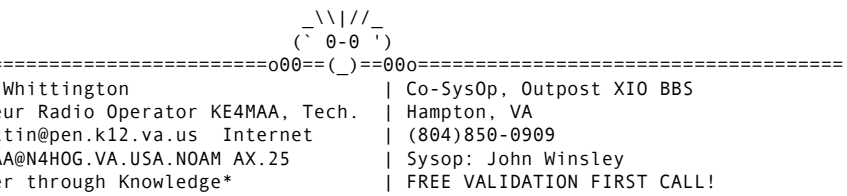
Hello again!
  I know everyone is probably sick of my hearing my problems
with Jnos, but if anyone can help, I would appreciate it.

  I am linking my system to the International Converse Bridge.
At times, there are in excess of 70 people on at one time.
When this happens, and I do a /W Q, the system freezes up and I
have to reset the system.

  I also have problems with the link just droping as soon as a
user logs into converse if there has been no user for a while.

  I am using Jnos 1.10h on a 286/16 and 1M of memory. There is
612k free when I start Jnos. Can anyone help?

Thanks, 73!
Mark, KE4MAA

--

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(` 0-0 ')
o00=(_)=00o
Mark Whittington | Co-SysOp, Outpost XIO BBS
Amateur Radio Operator KE4MAA, Tech. | Hampton, VA
mwhittin@pen.k12.va.us Internet | (804)850-0909
KE4MAA@N4HOG.VA.USA.NOAM AX.25 | Sysop: John Winsley
Power through Knowledge | FREE VALIDATION FIRST CALL!

170. [NETSIG:754] Re: Syntor radios

From: dave.wolf@phx-az.com (Dave Wolf)
Date: Thu, 19 Jan 1995 22:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160605307@phx-az.com>
Rendered body type: text/plain

From: dwolf@tcet.unt.edu (Dave Wolf)
To: netsig@tapr.org
Date: Thu, 19 Jan 95 22:59 CST
Subject: [NETSIG:754] Re: Syntor radios

Tim: There are some ROSE folks using some for a link into Shreveport
from Dallas at 9600. I have one of the units from that same surplus
batch that will be put to use on a TexNet-DFW BBS backbone network when
I get some other projects out of the way. The radio belongs to N5VGC
and I haven't yet started checking it out. It will run at 1200 baud.

You might get in touch with N5BCA at his callbook address (don't know if
he has an e-mail address...) to see what mods were performed on the
radios they have in service on 9600. N5BCA goes by his middle name
(Tom), not the first name you'll find in the callbook listing, fyi.

Best 73 de Dave
Lemme know if you decide to pick up the radio and what kind of luck you
have with it. Only bugaboo is getting the thing re-prommed for the ham
freqs, as I understand it.

171. [NETSIG:750] Re: Son of X1J curious behaviour

From: ka4byp@wa4mei.radio.org (Ka4byp@wa4mei.radio.org)
Date: Thu, 19 Jan 1995 18:07:00 GMT
To: netsig@tapr.org
Message-ID: <950122160604304@phx-az.com>
Rendered body type: text/plain

From: "Bob Merritt" <ka4byp@wa4mei.radio.org>
To: netsig@tapr.org
Date: Thu, 19 Jan 95 18:07 CST
Subject: [NETSIG:750] Re: Son of X1J curious behaviour

[stuff deleted]

> After initiating 1 ping to n3gir, I get continuous stream of
> replies. n3gir's box returns only one reply, and I never
> transmit anything after the first PING. (verified by watching
> the trace screen). Replies eminate from the stack at the rate
> of about 1 every 15 seconds for a few minutes.
[stuff deleted]
>
> I've tried both JNOS and TNOS, no diff. The machine I'm pinging
> is running MSYS. I can sucessfully ping another MSYS machine,
> (direct, not thru the stack), so I'm not inclined to blame MSYS.
>
It is the fault of the MSYS, we just went thru the same problems here
locally when somebody brought up a new BBS. The fix is to
explicitly make sure that in the ARP table for the X1J node that
you're connecting thru, has it set for DG mode for that MSYS box.

At least that's all we did here to fix it. :) Maybe that will work
for you. This is quite an irritating bug. Especially when several
folks are testing to determine the problem and reply pings come back
to everybody once every few seconds for 5 or 6 minutes from a single
ping!

73/Bob ka4byp

Bob Merritt   ka4byp@mail.radio.org |work: 404-784-6320
PO Box 185 |home: 404-412-6237
Griffin, GA 30224 |data: 404-228-3953

172. [NETSIG:752] Re: TNC selection

From: ron.ve1aic@phx-az.com (Ron Ve1aic)
Date: Thu, 19 Jan 1995 19:05:00 GMT
To: netsig@tapr.org
Message-ID: <950122160604303@phx-az.com>
Rendered body type: text/plain

From: rmackay@bud.peinet.pe.ca (Ron VE1AIC)
To: netsig@tapr.org
Date: Thu, 19 Jan 95 19:05 CST
Subject: [NETSIG:752] Re: TNC selection

>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>
>
>>Of the various brands of tncs I've had dealings with in setting up
>>and running I would NEVER buy a another mfj even at $1.00
>>they have the worst documentation several pots that takes scope to
>>keep in alignment and are extremly finicky as to who they will decode
>
>
Don either you got some real lemons from MFJ or else there are other
problems involved other than the tnc. I have 4 MFJ tnc's that have been
running for
years without any problems. ALL of them MFJ1270 ,1270B (2), 1274 are solid.
The 1270 has been on a VHF node for 7 years and the 1274 has been on 15m/20M
for almost 8 years non-stop.
As for alignment, well the schematics are a rather tiny but they are
readable and the Calibrate info is easy to follow...or so I found but then
I built a TAPR tnc2 so I had practise.
73 - Ron

173. [NETSIG:755] BPQ curious beaviour

From: richard.saue@phx-az.com (Richard Saue)
Date: Fri, 20 Jan 1995 01:43:00 GMT
To: netsig@tapr.org
Message-ID: <950122160605306@phx-az.com>
Rendered body type: text/plain

From: Richard.Saue@jur.uib.no (Richard Saue)
To: netsig@tapr.org
Date: Fri, 20 Jan 95 01:43 CST
Subject: [NETSIG:755] BPQ curious beaviour

Hi!

I am relaying a request from our local sysop LA6CU, Per, regaring curious BPQ
beaviour. I will inform him about any reply on this request....

73 de Richard - LA4SGA @ LA1B

****

LA6CU:

On LA1B club-station we are using DesqView to multitask an FBB BBS and a
Packclus Packet Cluster in the same '486 PC. We use BPQ 4.08 as a driver for
both applications, and via a DRSI-card to the radios. All seems to work fine,
after a long time of optimizing (hi), except for two BIG and annoying problems:

1:
If the traffic is heavy, or link not-so-good, between BPQ and our local TheNet
node, BPQ sometimes gets confused and sends the same frames over-and-over again
,
even if I can see in the monitor-window that the frames HAVE been ack'ed (and a
s
'I' can see them in the monitor-window of FBB, so can BPQ, hi). BPQ may send th
e
SAME frame (with same frame-number) several times in the same transmission. An
d
the same transmission may be repeated many times ! So it wastes a lot of
time.....

2:
When a user reads mail, or downloads files from the BBS (via the TheNet-node an
d
BPQ) the flow of frames may suddenly stop. Sometimes it will be resumed, other
times it will not. But if the user sends an ENTER, the flow resumes at once.
This is not normal, and very annoying.
Can anybody help ?

73 de Per, LA6CU @ LA6CU.BRG.R.NOR.EU

174. [NETSIG:733] Re: DCD mods?

From: david.kelly@phx-az.com (David Kelly)
Date: Sat, 14 Jan 1995 18:19:00 GMT
To: netsig@tapr.org
Message-ID: <950122160559282@phx-az.com>
Rendered body type: text/plain

From: dkelly@tomcat1.tbe.com (David Kelly)
To: netsig@tapr.org
Date: Sat, 14 Jan 95 18:19 CST
Subject: [NETSIG:733] Re: DCD mods?

> The XR2211 gives somewhat adequate DCD performance by itself, depending on
> the audio noise characteristics of the input signal (for fm receiver vhf/uhf
> afsk). For HF (or if the unsquelched noise output triggers the DCD), the
> TAPR 2211 DCD kit is a very good low priced solution. It is a small board
> which plugs into the 2211 socket and the 2211 must be plugged into a socket
> on the DCD board. In most cases one external wire to the TNC board is also
> required. N7CL wrote some mods which improve the performance of the stock
> TNC in a PSR several years ago, but the DCD kit is even better,
>
> Bob
>
> -------
> Bob Nielsen   Internet: nielsen@primenet.com
> Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

Running from memory, it seems that if you remove the MF10 (and possibly
one of the component carriers), wire your signal thru the empty MF10
socket, and possibly change a series 1.0 uF cap to 0.1 uF, you can
improve VHF performance and sensitivity. Seems the 2211 will lock on
a wider range of signal amplitudes than the MF10 will accept. Also the
MF10 does such a fine job of filtering that most everything looks like
a signal to the 2211. Remove the MF10 and the 2211 functions pretty
well with an open squelch.

Best thing to do is add TAPR's DCD kit.

73,
--
David Kelly, N4HHE,   n4hhe@amsat.org,   dkelly@nebula.tbe.com
----
Did you know that if you took all the economists in the world and lined
them up end to end, they'd still point in the wrong direction?

175. [NETSIG:740] Re: TNC selection

From: hank.oredson@phx-az.com (Hank Oredson)
Date: Tue, 17 Jan 1995 15:37:00 GMT
To: netsig@tapr.org
Message-ID: <950122160601292@phx-az.com>
Rendered body type: text/plain

From: hank_oredson@MENTORG.COM (Hank Oredson)
To: netsig@tapr.org
Date: Tue, 17 Jan 95 15:37 CST
Subject: [NETSIG:740] Re: TNC selection

On Jan 17, 12:39pm, Andrew J. Lynch wrote:
> Subject: [NETSIG:739] TNC selection
> Form: Memo
> Text: (26 lines follow)
> Net SIG Folks:
>
> I am trying to make a decision on purchasing a TNC and would appreciate your
> help. I am looking for a TNC that is KISS mode compatible, can access 1200
> bps and 9600 bps packets, work with my homebuilt Ramsey 2M radio (currently
> works with a 1200 bps BAYCOM-style modem and accepts direct modulation FM
> packet, though it will probably need a deviation tune up before it will work

> with 9600 bps) and is of reasonable (about $250) cost. I intend to use the
> TNC to connect to the local TCP/IP packet network and use ETHRAX25 as a
> driver for Windows Winsock applications.
>
> There are several on the market which appear to meet these specifications
> from MFJ, AEA, Pacomm, Kantronics, etc. I read an article in QST recently on
> this, but it did not select a model as "best" and it didn't review the MFJ
> TNC. Would you please post your opinion on what would be the "best" choice
> in TNC, particularily if I didnt mention a brand of TNC. If the TNC is
> available in kit form would be a plus. I am currently leaning towards the
> MFJ, but dont feel I have enough real information to make a selection yet.
> I appreciate your input. Thanks in advance,

The kpc-9612 from Kantronics will run two radios at the same time,
one at 1200 and one at 9600. In other words, it is a full two
channel tnc, with one 1200 baud port and one 9600 baud port.

We have a fair number of them running in our network here in the Portland
area, and are very pleased with their performance, particularly
considering the low price.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

176. [NETSIG:737] Re: DCD mods?

From: robert.b..donnell.-.kd7nm@phx-az.com (Robert B. Donnell - Kd7nm)
Date: Mon, 16 Jan 1995 05:22:00 GMT
To: netsig@tapr.org
Message-ID: <950122160600288@phx-az.com>
Rendered body type: text/plain

From: rdonnell@eskimo.com (Robert B. Donnell - KD7NM)
To: netsig@tapr.org
Date: Mon, 16 Jan 95 05:22 CST
Subject: [NETSIG:737] Re: DCD mods?

> *** David Kelly tapped ....:
> > > What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> > > equivelent. Are there mod circuits available somewhere?
> > > Marvin - WB6PKK
> >
> > TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works
> > pretty good. Highly recomended.
> >
>
> How does this improve on the existing DCD in the 1270 ? are there
> details of the circuit design available ?
>
> Rob
>
> --
> rob mayfield asc p/l box 73 oaklands park   mayfield@itd.adelaide.edu.au
> vk5xxx@vk5xxx.#adl.#sa.aus.oc   I am the dreamer ...
> http://wattle.itd.adelaide.edu.au/~mayfield   ... you are the dream
>
>

The TAPR 'True DCD' kit is based on an article by Eric Gustafson, N7CL.
The circuit looks at the data stream coming from the modem and detects
data transitions synchronized to the baud rate in use.

When noise is present at the input of the modems used commonly for 300,
1200, and 9600 baud operations the data output is not synchronized to
the baud rate being used, the True DCD circuit detects this condition
and sets its DCD output false.

When modem output is synchronous and at the correct baud rate then the
True DCD circuit sets its DCD output true.

This allows the use of unsquelched audio from the receiver, with the
advantage of removing the delay in detecting presence of another packet
transmission that is caused by the radio's squelch circuit. The direct

benifit is the reduction in collisions. A side benifit is that all
users on the channel may be able to reduce the amount of time wasted at
the beginning of each packet sending flags, i.e. the TXDELAY value can
be reduced.

Hope this helps.

73, Bob, KD7NM

177. [NETSIG:756] Re: TNC selection

From: tmoulton@ram.net (Tmoulton@ram.net)
Date: Fri, 20 Jan 1995 05:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160605308@phx-az.com>
Rendered body type: text/plain

From: tmoulton@ram.net
To: netsig@tapr.org
Date: Fri, 20 Jan 95 05:59 CST
Subject: [NETSIG:756] Re: TNC selection

>From: netsig@tapr.org (netsig (tapr))
>Date: Thu, 19 Jan 95 22:57 CST
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>Subject: [NETSIG:753] Re: TNC selection
>
>>
>> 5Khz is great for Voice, but how many of us really have much energy at
>> 2200hz?
>
>Sheesh!
>
>So?
>
>(No, this is not a flame - read on ;-)
>
>Try saying these into a comm quality mic connected to an audio spectrum
>analyzer. The >2200 hz content will definitely be there, and in
>significant quantities!
>
>"SH" is natures way of making pink noise (equal energy per octave). "S"
>is a nice white noise generator (equal energy per Hz, which gives double
>the energy in each ascending octave.)
>
>Voice with little content other than fundamental vocal cord frequencies
>is unintelligible. And sometimes with all the frequencies, it still is.
>
>And sometimes I don't have much energy at ANY frequency :-)
>
> -- mike curtis
>wd6ehr@kaiwan.com

I am no audio expert, but bell 202 modem signals have 50% of the power at
2200 plus sidebands. That is for stream of zero's a stream of 1's could have
much more... i guess over a few bytes of data it still sits at 50% due to
zero insertion.

BUT! when the voice radio clips the higher stuff our ears don't care, but a
modem does, since the lost energy is Distortion

a signal that is too wide for your receiver has a low frequency hash that
hurts your ears to listen to.

The seat of the pants way I tell people to adjust the audio level is to turn
it down until the level drops and then keep going until there is a hollow
sound to the tones. That hollow sound the the lack of noise between 1200 and
2200 as well as below 1200 where we expect noise always to be

this is one of the hardest things to expplain without audio...

tom

178. [NETSIG:743] Re: TNC selection

From: n7wol@beaker.cc.wwu.edu (N7wol@beaker.cc.wwu.edu)
Date: Wed, 18 Jan 1995 15:27:00 GMT
To: netsig@tapr.org

Message-ID: <950122160602295@phx-az.com>
Rendered body type: text/plain

From: Donald Loughmiller <n7wol@beaker.cc.wwu.edu>
To: netsig@tapr.org
Date: Wed, 18 Jan 95 15:27 CST
Subject: [NETSIG:743] Re: TNC selection

Hi Andrew

Of the various brands of tncs I've had dealings with in setting up
and running I would NEVER buy a another mfj even at $1.00
they have the worst documentation several pots that takes scope to
keep in alignment and are extremly finicky as to who they will decode

Of all I've dealt with the best (my own opinion) 8-) is the tncs
that kantronics puts out thier docs are clear and straight foward
there is few adjustments if any ever needed they use very little power
and will run on most anything from 8 - 16 volts. We switched from
the mfjs on our bbs to the kpc-3 (1200 only) and have had no problems
please take this just as one persons opinion but I hope it helps
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On Tue, 17 Jan 1995, Andrew J. Lynch wrote:

> Form: Memo
> Text: (26 lines follow)
> Net SIG Folks:
>=20
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> help. I am looking for a TNC that is KISS mode compatible, can access 120=
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> works with a 1200 bps BAYCOM-style modem and accepts direct modulation FM=
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> driver for Windows Winsock applications.
>=20
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> TNC.  Would you please post your opinion on what would be the "best" choi=
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> in TNC, particularily if I didnt mention a brand of TNC.  If the TNC is=
=20
> available in kit form would be a plus.  I am currently leaning towards th=
e=20
> MFJ, but dont feel I have enough real information to make a selection yet=
 =20
> I appreciate your input.  Thanks in advance,
>=20
> 73 de N8VEM
>=20
> Andrew Lynch
>=20
> alynch@wpdis01.wpafb.af.mil
>  =20
> Use Proportional Font: true
> Attachment Count: 0
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179. [NETSIG:747] Son of X1J curious behaviour

```
From: terry.ryan@phx-az.com (Terry Ryan)
Date: Thu, 19 Jan 1995 10:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160603300@phx-az.com>
Rendered body type: text/plain
```

From: n3fih@omni.voicenet.com (Terry Ryan)
To: netsig@tapr.org
Date: Thu, 19 Jan 95 10:59 CST
Subject: [NETSIG:747] Son of X1J curious behaviour

I'm still seeing the repeated response to a ping problem, and am attaching a copy of the arp/route tables from the two nodes in our stack involved.

I (n3fih, 44.80.13.1) am coming in on MET03, and am PINGing n3gir (44.80.13.2) who is on MET02

After initiating 1 ping to n3gir, I get continuous stream of replies. n3gir's box returns only one reply, and I never transmit anything after the first PING. (verified by watching the trace screen). Replies eminate from the stack at the rate of about 1 every 15 seconds for a few minutes.

I'm using the single-ip-address-per-stack scheme from the X1JR2 manual. Internally, the nodes on the stack refer to each other using a bogus address (44.128.0.sid) that is never seen outside the stack. 44.80.128.5 is the internal name for the MET03 aa3ch-5, .6 is for MET02 -6, and .7 for the 19.2kb 440 METHS port aa3ch-7

I've tried both JNOS and TNOS, no diff. The machine I'm pinging is running MSYS. I can sucessfully ping another MSYS machine, (direct, not thru the stack), so I'm not inclined to blame MSYS.

```
>From MET03 aa3ch-5 (145.01) (the machine I'm coming in on)
arp
MET03:AA3CH-5}
Destination       P hw-type Callsign   Mode  Timer
44.128.0.6          AX.25   AA3CH-6     DG
44.80.44.60       P AX.25   WJ3G        DG
44.128.0.7          AX.25   AA3CH-7     DG
44.80.13.1        P AX.25   N3FIH-4     DG
44.80.44.1          AX.25   N3ILL-1     DG

ipr
MET03:AA3CH-5}
Destination      Len  I/F     Gateway           Metric
44.80.13.2        32  Port 1  44.128.0.6
44.80.13.23       32  Port 0
44.80.44.0        24  Port 0  44.80.44.1
44.80.32.0        24  Port 0  44.80.44.1
44.80.13.0        24  Port 0
```

```
44.80.40.0        24  Port 1  44.128.0.6
44.80.24.0        24  Port 1  44.128.0.6
44.80.42.0        24  Port 1  44.128.0.6

------------------------------------------------------------

>From MET02 aa3ch-5 (223.44) (the node I reach n3gir thru)
arp
MET02:AA3CH-6}
Destination       P hw-type Callsign   Mode  Timer
44.80.13.10       P AX.25   AA3CH-2
44.128.0.7          AX.25   AA3CH-7
44.128.0.5          AX.25   AA3CH-5
44.80.42.2        P AX.25   WB3FQY-2
44.80.13.2        P AX.25   N3GIR-10


ipr
MET02:AA3CH-6}
Destination      Len  I/F     Gateway           Metric
44.80.13.2        32  Port 0
44.80.13.10       32  Port 0
44.80.44.0        24  Port 1  44.128.0.5
44.80.32.0        24  Port 1  44.128.0.5
44.80.13.0        24  Port 1  44.128.0.5
44.80.42.0        24  Port 0  44.80.42.2
44.80.40.0        24  Port 0  44.80.42.2
44.80.24.0        24  Port 0  44.80.42.2


*********************************************************

what I get from trace is
(ax0) AA3CH-5->N3FIH-4 IP  n3gir->n3fih ICMP Echo Reply
0000  ....
(ax0) AA3CH-5->N3FIH-4 IP  n3gir->n3fih ICMP Echo Reply
0000  ....
(ax0) AA3CH-5->N3FIH-4 IP  n3gir->n3fih ICMP Echo Reply
0000  ....

..etc

Anybody??
-----------------------------------------------------------------
                  Terry Ryan, N3FIH
            Ham: n3fih@n3nad.#epa.pa.usa.noam
            Internet: n3fih@omni.voicenet.com
                Compu$erve: 76070,1000
```

180. TNC2118... Thanks

```
From: RDAI@delphi.com
Date: Sun, 22 Jan 1995 23:37:08 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HM5YBPXD6Q95X3HN@delphi.com>
Rendered body type: text/plain
```

Thanks to all who responded to my query. Looks like I'll be
adding more ram to the 1270.
Regarding the tnc2119 code... is it file-request'able?

Thanks again,

KA8OKH
---

181. [NETSIG:764] Re: TNC Selection

```
From: wbradford@delphi.com (Wbradford@delphi.com)
Date: Fri, 20 Jan 1995 22:29:00 GMT
To: netsig@tapr.org
Message-ID: <950122160607316@phx-az.com>
Rendered body type: text/plain
```

From: WBRADFORD@delphi.com
To: netsig@tapr.org
Date: Fri, 20 Jan 95 22:29 CST
Subject: [NETSIG:764] Re: TNC Selection

My experience with the MFJ TNC's has been excellent. Good thing my
desk is wood (knock knock, who's there, hopefully not the failure
spirit!). I have 12 1270 (various b,c) TNC's and all have performed
just fine except for some rare lightening hits at a 8700 ft. node
site. Audio and serial port chips smoke, otherwise OK.

I use them at my home station, but other TNC's might be better or
offer more features (So get lanlink etc.).

I need to say that I have had the Most Diffculty with Kantronics.
Three out of three, all junk, And Bad customer support and service
from the dealer. But the 1270c seems to me like a good choice.

Just one ham's experience.

73 Bill k7ea@wb7ulh.ut   wbradford@delphi.com

182. [NETSIG:768] Re: Mitrek Tranceivers

From: dave.wolf@phx-az.com (Dave Wolf)
Date: Sat, 21 Jan 1995 10:05:00 GMT
To: netsig@tapr.org
Message-ID: <950122160608321@phx-az.com>
Rendered body type: text/plain

From: dwolf@tcet.unt.edu (Dave Wolf)
To: netsig@tapr.org
Date: Sat, 21 Jan 95 10:05 CST
Subject: [NETSIG:768] Re: Mitrek Tranceivers

A source of manuals, accessories is
CW Wolfe Communications (no relation...)
phone: 406-252-9220
fax: 406-252-9617

Dave Wolf WO5H

183. [NETSIG:771] Re: TNC2118A

From: wbradford@delphi.com (Wbradford@delphi.com)
Date: Sat, 21 Jan 1995 20:55:00 GMT
To: netsig@tapr.org
Message-ID: <950122160609324@phx-az.com>
Rendered body type: text/plain

From: WBRADFORD@delphi.com
To: netsig@tapr.org
Date: Sat, 21 Jan 95 20:55 CST
Subject: [NETSIG:771] Re: TNC2118A

The jumper to enable memory increase from 16 to 32k is jmp # 12.

But be careful. Some of the 1270 pc boards from that era do not
match the parts layout as described in the book.

Trace the pc board and verify with the schematic that the 'jumper'
really connects to the right pins on U12. The jumper will probably
have to be changed via soldering iron.

73 Bill k7ea@wb7ulh.ut.usa.na   wbradford@delphi.com

184. [NETSIG:769] Anyone Got the IC3200 on 96k

From: wx7y@egate.nc7f.ampr.org (Wx7y@egate.nc7f.ampr.org)
Date: Sat, 21 Jan 1995 12:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160608322@phx-az.com>
Rendered body type: text/plain

From: wx7y@egate.nc7f.ampr.org
To: netsig@tapr.org
Date: Sat, 21 Jan 95 12:59 CST
Subject: [NETSIG:769] Anyone Got the IC3200 on 96k

Im interested to see if anyone has been able to get the icom-3200a Radio to
work on 9600 baud I have done some expermenting and noticed that there is
not quite enough band width without removing some of the circutry, I would stil
l like to have the use of the radio for voice an
sd 1200 baud packet so if
anyone has had any success please let me know 73 de Bret WX7Y
Bret Mills

801-748-5026 Hm
wx7y@egate.nc7f.ampr.org

185. [NETSIG:765] TNC2118A

From: rdai@delphi.com (Rdai@delphi.com)
Date: Fri, 20 Jan 1995 23:31:00 GMT
To: netsig@tapr.org
Message-ID: <950122160607318@phx-az.com>
Rendered body type: text/plain

From: RDAI@delphi.com
To: netsig@tapr.org
Date: Fri, 20 Jan 95 23:31 CST
Subject: [NETSIG:765] TNC2118A

Hello NETSIG,

While this may not exactly be a networking issue, I'm hoping that
someone here may shed a lil light on my problem.
 I am trying to replace the standard eprom in my 1270b with the
TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
currently using 1.1.3 firmware. I believe it is a 16k ram unit.

I file-requested the code from tapr.org, and blew the eprom. But
the tnc just sits with the STA & CON leds lit when I installed it.
Should it work? Does the tnc require any additional modifications
(i.e. 32k ram)? Any help would be appreciated.

Thanks,

KA8OKH (rdai@delphi.com)
------

186. [NETSIG:770] Re: TNC2118A

From: gjones@tenet.edu (Gjones@tenet.edu)
Date: Sat, 21 Jan 1995 13:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160609323@phx-az.com>
Rendered body type: text/plain

From: Greg Jones <gjones@tenet.edu>
To: netsig@tapr.org
Date: Sat, 21 Jan 95 13:59 CST
Subject: [NETSIG:770] Re: TNC2118A

1.1.8a and now 1.1.9 requires that the TNC have 32K of SRAM.

Greg

According to RDAI@delphi.com:
>
>
> Hello NETSIG,
>
> While this may not exactly be a networking issue, I'm hoping that
> someone here may shed a lil light on my problem.
> I am trying to replace the standard eprom in my 1270b with the
> TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
> currently using 1.1.3 firmware. I believe it is a 16k ram unit.
>
> I file-requested the code from tapr.org, and blew the eprom. But
> the tnc just sits with the STA & CON leds lit when I installed it.
> Should it work? Does the tnc require any additional modifications
> (i.e. 32k ram)? Any help would be appreciated.
>
> Thanks,
>
> ----------
> KA8OKH (rdai@delphi.com)
> ------
>

187. [NETSIG:763] more radio h/w info on N6GN WWW page

From: glenne@tiger.sr.hp.com (Glenne@tiger.sr.hp.com)
Date: Fri, 20 Jan 1995 14:50:00 GMT
To: netsig@tapr.org

Message-ID: <950122160607315@phx-az.com>
Rendered body type: text/plain

From: Glenn Elmore <glenne@tiger.sr.hp.com>
To: netsig@tapr.org
Date: Fri, 20 Jan 95 14:50 CST
Subject: [NETSIG:763] more radio h/w info on N6GN WWW page

I've added some h/w information to the WWW page:

```
|--------------- N6GN's Higher Speed Packet WWW Page -------------------|
|                                                                        |
|       ftp://col.hp.com/hamradio/packet/n6gn/index.html                 |
|                                                                        |
|------------------------------------------------------------------------|
```

so that it now includes some descriptions, schematics, plots and such for
not only the original microwave data link but also for the 904 MHz radios
and "Layer 3 TNC" development.
I'll not likely have much time to do anything about any of this in the
near future but it may still be of interest to some.

Glenn n6gn

188. [NETSIG:767] Re: TNC2118A

From: david.zeph@phx-az.com (David Zeph)
Date: Sat, 21 Jan 1995 03:28:00 GMT
To: netsig@tapr.org
Message-ID: <950122160608320@phx-az.com>
Rendered body type: text/plain

From: zephd@iquest.net (David Zeph)
To: netsig@tapr.org
Date: Sat, 21 Jan 95 03:28 CST
Subject: [NETSIG:767] Re: TNC2118A

If my memory is correct, V1.1.6 was the last with two versions one for 16Kb
and another for 32Kb SRAMs. With V1.1.7 onwards you had to upgrade to the
32K SRAM.

73 ---> Dave, W9ZRX   (zephd@iquest.net)

>
>Hello NETSIG,
>
>While this may not exactly be a networking issue, I'm hoping that
>someone here may shed a lil light on my problem.
> I am trying to replace the standard eprom in my 1270b with the
>TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
>currently using 1.1.3 firmware. I believe it is a 16k ram unit.
>
>I file-requested the code from tapr.org, and blew the eprom. But
>the tnc just sits with the STA & CON leds lit when I installed it.
>Should it work? Does the tnc require any additional modifications
>(i.e. 32k ram)? Any help would be appreciated.
>
>Thanks,
>
>----------
>KA8OKH (rdai@delphi.com)
>------
>
>

189. [NETSIG:766] Re: TNC2118A

From: bob.nielsen@phx-az.com (Bob Nielsen)
Date: Sat, 21 Jan 1995 02:07:00 GMT
To: netsig@tapr.org
Message-ID: <950122160608319@phx-az.com>
Rendered body type: text/plain

From: nielsen@PrimeNet.Com (Bob Nielsen)
To: netsig@tapr.org
Date: Sat, 21 Jan 95 02:07 CST
Subject: [NETSIG:766] Re: TNC2118A

Yes, versions later than 1.1.4 or 1.1.5 (I think TAPR changed one version
before MFJ) require 32k of RAM. It's fairly easy, just replace the two 8k
chips with a single 32k chip and change a jumper. The TAPR office still has
the chips available, as well as the mod instructions ($20 -10% if you are a
member plus $2 for shipping).

Bob

>
>Hello NETSIG,
>
>While this may not exactly be a networking issue, I'm hoping that
>someone here may shed a lil light on my problem.
> I am trying to replace the standard eprom in my 1270b with the
>TAPR 1.1.8a firmware. The tnc is dated around late 1986, and is
>currently using 1.1.3 firmware. I believe it is a 16k ram unit.
>
>I file-requested the code from tapr.org, and blew the eprom. But
>the tnc just sits with the STA & CON leds lit when I installed it.
>Should it work? Does the tnc require any additional modifications
>(i.e. 32k ram)? Any help would be appreciated.
>
>Thanks,
>
>----------
>KA8OKH (rdai@delphi.com)
>------
>
>

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

190. [NETSIG:760] Motorola Info

From: tedhm@chevron.com (Tedhm@chevron.com)
Date: Fri, 20 Jan 1995 13:06:00 GMT
To: netsig@tapr.org
Message-ID: <950122160606313@phx-az.com>
Rendered body type: text/plain

From: "Ed Maling" <TEDHM@chevron.com>
To: netsig@tapr.org
Date: Fri, 20 Jan 95 13:06 CST
Subject: [NETSIG:760] Motorola Info

To: OAS   --SSW1   OPEN ADDRESSING SE

FROM: Ed Maling
      Chevron Info Tech Co
      CSD - Tech Support
SUBJECT: Motorola Info

Gentlemen,
For Tim, aa5df:
Syntor UHF works well for me at 9600. Am not sure of the model # of
mine but it has plugging away for 3 yrs now w/o problems of any kind.
Dave Bray, n0its has schematics marked up for the mod; he can be
reached at dcbr@chevron.com.

For Jim, wb5gwh:
Mitrek model # t43xxxxxxxx is a 40w vhf unit. Manual part # is
68-P81045E70-O. Xtals can be had from: ICM at 800-725-1426 or
JAN at 800-JAN-XTAL. I've found ICM to put out a *very* high
quality product, they are aware of the value of their product.
For mountain-top use where temp fluctuations may be a concern
they are probably the best bet. If the units will be used in
a shack at the house (temp controlled environment) JAN will
probably be good enough. For a complete element I think ICM
was getting around $80, to re-xtal an existing element I think
it was in the neighborhood of $18 apiece.

73 de n7mlr

Ed Maling (801)789-9666 (VERUT3)
1275 E. Hwy 40 # 3
Vernal, Ut 84078-2830
edhm@chevron.com

191. [NETSIG:758] Re: Son of X1J curious behaviour

From: michael.h..foster@phx-az.com (Michael H. Foster)
Date: Fri, 20 Jan 1995 09:59:00 GMT
To: netsig@tapr.org
Message-ID: <950122160606310@phx-az.com>
Rendered body type: text/plain

From: mfoster@amoco.com (Michael H. Foster)
To: netsig@tapr.org
Date: Fri, 20 Jan 95 09:59 CST
Subject: [NETSIG:758] Re: Son of X1J curious behaviour

Bob Merritt wrote:

It is the fault of the MSYS, we just went thru the same problems here
locally when somebody brought up a new BBS. The fix is to
explicitly make sure that in the ARP table for the X1J node that
you're connecting thru, has it set for DG mode for that MSYS box.

At least that's all we did here to fix it. :) Maybe that will work
for you. This is quite an irritating bug. Especially when several
folks are testing to determine the problem and reply pings come back
to everybody once every few seconds for 5 or 6 minutes from a single
ping!

----- End Included Message -----

I am coming in late on this...Bob you seem to be saying you fixed the
problem by making an arp entry into the x1j. I noted last night while
helping a new user get on to an x1j that had no local user arps and basic
routing between two other nodes with something like:
iproute 44.78/16 . With no arp entry for the new user,
a ping bounced around like crazy until it expired.

So what exactly was the "fault of the MSYS"?

mike wa5txx
mfoster@trc.amoco.com

192. [NETSIG:759] Re: Son of X1J curious behaviour

From: k5di@kazak.nmsu.edu (K5di@kazak.nmsu.edu)
Date: Fri, 20 Jan 1995 12:45:00 GMT
To: netsig@tapr.org
Message-ID: <950122160606311@phx-az.com>
Rendered body type: text/plain

From: Klarsen <k5di@kazak.NMSU.Edu>
To: netsig@tapr.org
Date: Fri, 20 Jan 95 12:45 CST
Subject: [NETSIG:759] Re: Son of X1J curious behaviour

On Thu, 19 Jan 1995, Terry Ryan wrote:

> I'm still seeing the repeated response to a ping problem, and am attaching a
> copy of the arp/route tables from the two nodes in our stack involved.
>
> Anybody??
> ---
>   Terry Ryan, N3FIH
>   Ham: n3fih@n3nad.#epa.pa.usa.noam
>   Internet: n3fih@omni.voicenet.com
>   Compu$erve: 76070,1000
>
>

        Terry you need to make your Broadcast IP number 255.255.255.255
and then make sure you can ping the x1j node. Then you need BOTH a route
to the other node and what your missing A ROUTE BACK TO THE FIRST NODE!

        No-one said it was simple....:-)

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
 *   *
 * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
 *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *

```
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

193. [NETSIG:761] TNC-2 Tuning

From: k5di@kazak.nmsu.edu (K5di@kazak.nmsu.edu)
Date: Fri, 20 Jan 1995 13:29:00 GMT
To: netsig@tapr.org
Message-ID: <950122160606312@phx-az.com>
Rendered body type: text/plain

From: Klarsen <k5di@kazak.NMSU.Edu>
To: netsig@tapr.org
Date: Fri, 20 Jan 95 13:29 CST
Subject: [NETSIG:761] TNC-2 Tuning

I have never seen such a rash of mis-information in quite a long time! It is amazing! I started tuning up tnc-2's about 1986 and have always used the method provided by the TAPR manual. What I think is happening is Hams are trying to tune up a tnc-2 (by MFJ or any other name) with a The-Net program chip in place.

To tune up a tnc-2 you should follow the book, step by step. Turn the little dinky 25 turn pots past he proper setting and then come back. Yes, I have tuned and tuned with no effect the wrong pot! The pot controlling the receive phase lock loop is hard to get just right, but that doesn't matter much anyway.

I have MFJ TNC's at several sites. They are large and the early ones have SLOW chips in them. But I will be glad to pay shipping for any that you guys want to sell cheap. The New Mexico Network has MFJ's at most sites today, that have been there for over 6 years! That is reliability!

```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu     *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

194. [NETSIG:762] Re: TNC selection

From: john.bednar@phx-az.com (John Bednar)
Date: Fri, 20 Jan 1995 13:50:00 GMT
To: netsig@tapr.org
Message-ID: <950122160607314@phx-az.com>
Rendered body type: text/plain

From: jkbe@aluxs.att.com (John Bednar)
To: netsig@tapr.org
Date: Fri, 20 Jan 95 13:50 CST
Subject: [NETSIG:762] Re: TNC selection

>>Donald Loughmiller <n7wol@beaker.cc.wwu.edu> wrote:
>
>
>>Of the various brands of tncs I've had dealings with in setting up
>>and running I would NEVER buy a another mfj even at $1.00
>>they have the worst documentation several pots that takes scope to
>>keep in alignment and are extremly finicky as to who they will decode
>
>
>Don either you got some real lemons from MFJ or else there are other
>problems involved other than the tnc. I have 4 MFJ tnc's that have been
>running for
>years without any problems. ALL of them MFJ1270 ,1270B (2), 1274 are solid.
>The 1270 has been on a VHF node for 7 years and the 1274 has been on 15m/20M
>for almost 8 years non-stop.
>As for alignment, well the schematics are a rather tiny but they are
>readable and the Calibrate info is easy to follow...or so I found but then
>I built a TAPR tnc2 so I had practise.
>73 - Ron

I have owned both several MFJ, Kantronics, and PacComm TNC's and feel like
I must come to Don's defense. I prefer Kantronics documentation and
USER firmware over both MFJ and PacComm. As for 1200 baud demodulators,
the 3105 circuit (Kantronics & PacComm) appears to be more forgiving to
RX audio level and frequency response however, the MFJ demodulator when fed
with the proper audio will work with shorter TXD's. At 1200 baud, the
latter difference is insignificant when considering thruput (bytes/sec).

Summed up....
For a user station, Kantronics stands out.

For a network node TNC, I prefer to stay away from MFJ because of
tones drifting when the TNC is subjected to wide temperature swings,
the demodulator is cranky with the user's level & TX frequency response,
the cpu speed of 4.8MHz, and the RS232 rate being limited to 19.2 Kbaud.
PacComm adresses all these issues. Too bad their schematics are
below average.

John

195. Re: [NETSIG:802] Re: TNC Selection

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sun, 22 Jan 1995 22:27:41 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501230627.WAA12369@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> From: WBRADFORD@delphi.com
> To: netsig@tapr.org
> Date: Fri, 20 Jan 95 22:29 CST
> Subject: [NETSIG:764] Re: TNC Selection
>
>
> My experience with the MFJ TNC's has been excellent. Good thing my
> desk is wood (knock knock, who's there, hopefully not the failure
> spirit!). I have 12 1270 (various b,c) TNC's and all have performed
> just fine except for some rare lightening hits at a 8700 ft. node
> site. Audio and serial port chips smoke, otherwise OK.

Of all the TNCs I've personally tried, MFJ has the best modem. The
XR2211/2206 chipset seems to decode packets that other modem chips don't.

> I use them at my home station, but other TNC's might be better or
> offer more features (So get lanlink etc.).

Yes, you get more features in a lot of TNCs, but if you run KISS mode,
it's all for naught :-)

> I need to say that I have had the Most Diffculty with Kantronics.
> Three out of three, all junk, And Bad customer support and service
> from the dealer. But the 1270c seems to me like a good choice.

My experience with my KAM has been better. I've had the problem with the
drying 10 uF caps, but once replaced, everything works fine.

The Kantronics VHF and HF modems are demonstrably inferior to MFJs. The
KAM offers true dual port service, and the MFJ runs just one at a time.

The Kantronics "software DCD" is still broken, though, as of version 7.0e.
It won't decode MFJ packets. I've gone back to my trusty TAPR DCD state
machine. It would be nice if they'd get this bug (or is it "feature" :-)
fixed.

G-TOR is an exceptionally good HF protocol. Too bad we don't have error
correction available for higher speeds :-(It would do absolute wonders
for 1200 baud, and especially for 9600 baud, where slight anomalies are
magnified into unusable paths. This is one hardware problem that can
definitely be fixed in software.

 -- mike curtis
wd6ehr@kaiwan.com

196. Re: [NETSIG:777] Loops

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 23 Jan 1995 07:12:32 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950123071124.26045B-100000@kazak>
Rendered body type: text/plain

On Sun, 22 Jan 1995, Daniel Meredith wrote:

> Hi All,
>   My system just recently began servicing a new domain, and
> ufortunately unbeknownst to me, there was a problem with the spooler
> and it was regenerating anything coming in from Listservs. This problem
> has been corrected and I offer my appologies for any inconvenience that
> this may have caused to your list.
>
>
> Daniel J. Meredith
> Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM
>
        Hey Dan, your problem is even looping your msg about loops...:-)

-karl k5di

197. 10khz packet channels--comments wanted (also tardy remark on mf10 bypass)

From: imotion@iu.net (Howard Goldstein)
Date: Mon, 23 Jan 1995 09:20:09 -0500
To: netsig@tapr.org
Message-ID: <199501231430.JAA21901@bb.iu.net>
Rendered body type: text/plain

tmoulton@ram.net (Tmoulton@ram.net) wrote:

> I wrote:
>>Yikes! Whatever gave you the idea you needed a scope to align the modem of
>>any TAPR TNC-2 clone with the XR chipset??????
>>
>>I fear CALIBRAT and RXCAL was all for naught :-(
>>
>>Howie N2WX
>>imotion@iu.net
>>
>
>Not to mention many people found it best to run without the Filter on the
>input... (esp when audio level can vary greatly...)

I think the first thing I did when the TNC-2 beta test was over was bypass
the MF10. I'd never had good luck with it and always attached to the
discriminator anyway.

>
>One other thing...
>
>   KEEP THE DEVIATION AT 2.7KHZ to 3.1 KHZ
>
>It can cause you to need as much as 20db more power due to the RX IF Filter
>in the radios.
>
>5Khz is great for Voice, but how many of us really have much energy at
>2200hz?

This is excellent advice and leads me into my next query to throw out to the
list.

FADCA (Florida) now touts 10Khz channels for packet on LANS separated by as
little as 35 miles. The frequency coordinator states that it is acceptable
because everyone can run software carrier detect.

I'd appreciate any comments, pro or con, on this policy. I'm concerned but
fear I have only empirical arguments to enter far into this controversial
subject.

Howie N2WX
imotion@iu.net

198. [NETSIG:817] Re: Loops

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Mon, 23 Jan 1995 16:00:25 GMT
To: netsig@tapr.org

Message-ID: <950123090107361@phx-az.com>
Rendered body type: text/plain

```
-> From: Klarsen <k5di@kazak.NMSU.Edu>
-> To: netsig@tapr.org
-> Date: Mon, 23 Jan 95 08:33 CST
-> Subject: [NETSIG:817] Re: Loops
->
->
->
-> On Sun, 22 Jan 1995, Daniel Meredith wrote:
->
-> > Hi All,
-> >     My system just recently began servicing a new domain,  and
-> > ufortunately unbeknownst to me,  there was a problem with the spool
-> > and it was regenerating anything coming in from Listservs.  This pr
-> > has been corrected and I offer my appologies for any inconvenience
-> > this may have caused to your list.
-> >
-> >
-> > Daniel J. Meredith
-> > Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM
-> >
->         Hey Dan, your problem is even looping your msg about loops...
->
-> -karl k5di
->

The only thing here is,  I DID NOT WRITE The message on January 22, nor
did my system re-generate it.  I think this is old mail in the queu at
the list.  I sent that message 2 times because I didn't see it come
through the list and sent them last week...Strange???


Dan

-----                      \---------------/                         -----
                    Arizona Network Intertie Group
                "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP                   Voice: +1-602-489-7384
P.O. Box 44563                               Fax  : +1-602-956-2566
Phoenix,  Arizona                            BBS  : +1-602-912-0225
          85064-4563

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator
```

199. RE: [NETSIG:818] 10khz packet channels--comments wanted (also tardy remark on mf10 bypass)

From: Murphree Michael A <mamurphree@space.honeywell.com>
Date: Mon, 23 Jan 95 11:57:00 PST
To: netsig <netsig@tapr.org>
Message-ID: <2F2406B4@smtpdos.space.honeywell.com>
Rendered body type: text/plain

```
>FROM Howie N2WX

>This is excellent advice and leads me into my next query to throw out to
the
>list.
>
>FADCA (Florida) now touts 10Khz channels for packet on LANS separated by as
>little as 35 miles.  The frequency coordinator states that it is acceptable
>because everyone can run software carrier detect.
>

On adjacent channels, doubtful with amateur grade equipment....

On the same channel no way!

I'm currently in St. Petersburg separated from Port Charlotte by at least 85
miles
and still get their signal booming in...  I've sent them messages in the
past but they
fail to see why they don't need 50W on top of 100' tower to cover their
local area.
I also have to contend with their users DXing their system who are 30 miles
closer
```

to me as well. The cell concept is never going to work here until our
frequency
coordinators make some attempt to understand the problems with their current

practice.

Mike N4CNW

200. Re: [NETSIG:776] Loops

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Mon, 23 Jan 1995 09:49:41 -0700
To: netsig@tapr.org, n7mrp@phx-az.com (Daniel Meredith)
Cc: lcz@datapoint.com
Message-ID: <199501231649.JAA18653@news.primenet.com>
Rendered body type: text/plain

>Hi All,
>My system just recently began servicing a new domain, and
>ufortunately unbeknownst to me, there was a problem with the spooler
>and it was regenerating anything coming in from Listservs. This problem
>has been corrected and I offer my appologies for any inconvenience that
>this may have caused to your list.
>
>
>Daniel J. Meredith
>Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM

As you probably know, it's happening again. Also, there seem to be many
looped messages which don't rewrite the originator as @phx-az.com. I can't
tell from here if it is part of the same problem or something different.

73, Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

201. Re: [NETSIG:818] 10khz packet channels--comments wanted (also tardy remark on mf10 bypass)

From: nielsen@PrimeNet.Com (Bob Nielsen)
Date: Mon, 23 Jan 1995 09:49:44 -0700
To: netsig@tapr.org
Message-ID: <199501231649.JAA18664@news.primenet.com>
Rendered body type: text/plain

>
>>Not to mention many people found it best to run without the Filter on the
>>input... (esp when audio level can vary greatly...)
>
>I think the first thing I did when the TNC-2 beta test was over was bypass
>the MF10. I'd never had good luck with it and always attached to the
>discriminator anyway.

I think Lyle or someone wrote in a PSR several years ago: remove the MF10!

As I recall, the voltages used in the TNC-2 are not proper for the MF10 chip
and cause it to degrade the input signal. In the TNC-1 it works fine. I
have a 1988 vintage MFJ-1270B which came with it bypassed and when TAPR
started selling the bare boards, I edited the assembly instructions to
eliminate the MF10.

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org

202. Re: [NETSIG:776] Loops

From: lcz@datapoint.com (Lee Ziegenhals)
Date: Mon, 23 Jan 1995 10:57:27 -0600 (CST)
To: nielsen@PrimeNet.Com (Bob Nielsen)
Cc: netsig@tapr.org, n7mrp@phx-az.com
Message-ID: <m0rWS59-0001OsC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

>>Hi All,
>>My system just recently began servicing a new domain, and
>>ufortunately unbeknownst to me, there was a problem with the spooler

>>and it was regenerating anything coming in from Listservs. This problem
>>has been corrected and I offer my appologies for any inconvenience that
>>this may have caused to your list.
>>
>>
>>Daniel J. Meredith
>>Sysadmin for @PHX-AZ.COM and @AZNETIG.STAT.COM
>
>As you probably know, it's happening again. Also, there seem to be many
>looped messages which don't rewrite the originator as @phx-az.com. I can't
>tell from here if it is part of the same problem or something different.

The offending address was removed from the list several days ago. However,
the dates on the looped messages indicate they are all from before the
problem was corrected. Apparently the errant system is holding on to
the messages for a week or so before it sends them back.

203. Re: [NETSIG:802] Re: TNC Selection

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Mon, 23 Jan 95 10:47:28 MST
To: netsig@tapr.org
Message-ID: <m0rWSuN-00002bC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

Looks like we are again getting multiple copies of tapr.org messages...

But, regarding TNC selection, I suppose it's mostly the luck of the draw
on where and when one gets a "bad" unit. Like K7EA, I've also had
excellent results from the MFJ-1270B series. Seems to be a very stable
design and has worked well in HF-VHF-UHF node service at rates from
300-9k6 baud. I haven't done so yet, but am told that for 9k6 baud
operation that there is a real benefit from adding the Paccomm 10 MHz
TNC-2 upgrade kit. If anyone on the net has done this, would appreciate
seeing their comments, pro or con. Another advantage of the MFJ-1270B
is that quite a few were sold and good working used units are often found
for less than $100.

For my home station TNC, I selected the Kantronics KPC-3. I liked its
small size and low current drain. What really helped this selection
though, is the Kantronics mail box features. At one time I used to do
quite a bit of QSOing via the network. It was rather frustrating to
have a distant station connect to you, start to leave a message, then
for whatever reason, have the circuit break and in the process, loosing
the message contents. With Kantronics mailbox software, the mailbox KEEPS
whatever it received up to the time of disconnect. A VERY nice feature
and as far as I know, exclusive to Kantronics.

73 de Jack

204. Re: [NETSIG:822] Re: 10khz packet channels--comments wanted (also tar

From: tmoulton@ram.net
Date: Mon, 23 Jan 95 12:54:23 EST
To: netsig@tapr.org
Message-ID: <06217.15021573@RAMail>
Rendered body type: text/plain

>
>I think Lyle or someone wrote in a PSR several years ago: remove the MF10!
>
>As I recall, the voltages used in the TNC-2 are not proper for the MF10 chip
>
>and cause it to degrade the input signal. In the TNC-1 it works fine. I

the signals and the rs232 driver on the neg supply caused the -V to vary,
causing distortion.

thanks, i had forgotten why...

205. Re: [NETSIG:816] Re: TNC Selection

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 23 Jan 95 10:16:51 PST
To: netsig@tapr.org
Message-ID: <9501231016.ZM26984@hanko>
Rendered body type: text/plain

On Jan 23, 12:34am, Mike Curtis wrote:
> Subject: [NETSIG:816] Re: TNC Selection
> >

> > From: WBRADFORD@delphi.com
> > To: netsig@tapr.org
> > Date: Fri, 20 Jan 95 22:29 CST
> > Subject: [NETSIG:764] Re: TNC Selection
> >
> >
> > My experience with the MFJ TNC's has been excellent. Good thing my
> > desk is wood (knock knock, who's there, hopefully not the failure
> > spirit!). I have 12 1270 (various b,c) TNC's and all have performed
> > just fine except for some rare lightening hits at a 8700 ft. node
> > site. Audio and serial port chips smoke, otherwise OK.
>
> Of all the TNCs I've personally tried, MFJ has the best modem. The
> XR2211/2206 chipset seems to decode packets that other modem chips don't.
>
> > I use them at my home station, but other TNC's might be better or
> > offer more features (So get lanlink etc.).
>
> Yes, you get more features in a lot of TNCs, but if you run KISS mode,
> it's all for naught :-)
>
> > I need to say that I have had the Most Diffculty with Kantronics.
> > Three out of three, all junk, And Bad customer support and service
> > from the dealer. But the 1270c seems to me like a good choice.
>
> My experience with my KAM has been better. I've had the problem with the
> drying 10 uF caps, but once replaced, everything works fine.
>
> The Kantronics VHF and HF modems are demonstrably inferior to MFJs. The
> KAM offers true dual port service, and the MFJ runs just one at a time.
>
> The Kantronics "software DCD" is still broken, though, as of version 7.0e.
> It won't decode MFJ packets. I've gone back to my trusty TAPR DCD state
> machine. It would be nice if they'd get this bug (or is it "feature" :-)
> fixed.
>
> G-TOR is an exceptionally good HF protocol. Too bad we don't have error
> correction available for higher speeds :-(It would do absolute wonders
> for 1200 baud, and especially for 9600 baud, where slight anomalies are
> magnified into unusable paths. This is one hardware problem that can
> definitely be fixed in software.

We have CLOVER available, which has error correction and runs
at up to 750 bps in a 500 Hz. bandwidth. Anyone serious about
moving traffic on HF should consider CLOVER first ... it's the
best option available.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

206. Re: [NETSIG:820] RE: 10khz packet channels--comments wanted (also tardy

From: Tim Baggett <tim@nmsu.edu>
Date: Mon, 23 Jan 1995 11:17:18 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.3.87.9501231118.C24711-0100000@wilma>
Rendered body type: text/plain

> to me as well. The cell concept is never going to work here until our
> frequency
> coordinators make some attempt to understand the problems with their current

Just my 2 cents - some VHF/UHF freq coordinators will not coordinate
packet frequencies because they are 'simplex'.

Sounds silly to me. I just asked for a repeater pair. When he asked what
I was going to use them for, I replied, "Two packet channels 5MHz apart" :)

Around Southern NM, the packet users have to coordinate their frequencies
among themselves and try to avoid the ATVers, Satellite, White Sands
Missle Range, and the repeaters.

73
Tim, AA5DF

Las Cruces, NM

207. Re: NETSIG Loop (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 23 Jan 1995 12:32:04 -0600 (CST)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199501231832.MAA21491@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

This just in from Lee at the TAPR list.

Will just have to ride the wave (i.e. use the delete key a little more)
until the water (i.e. messages) pass.

Greg

According to Lee Ziegenhals:
>From lcz@datapoint.com Mon Jan 23 09:39:19 1995
From: lcz@datapoint.com (Lee Ziegenhals)
Subject: Re: NETSIG Loop
Date: Mon, 23 Jan 1995 09:39:11 -0600 (CST)

>Looks like we have another loop on NETSIG.

I have finally located the offending address. It is "NET@AZNETIG.STAT.COM".

It turns out I had already removed that address when we had the problems
last time, but apparently it still has a bunch of old messages in its
queue. I can't filter them out by address because it retains the address
of the original sender. I don't think there's much I can do about it until
all the old messages get flushed. I'll take a look.

Lee

208. RE: [NETSIG:791] Re: Syntor radios

From: Murphree Michael A <mamurphree@space.honeywell.com>
Date: Mon, 23 Jan 95 17:06:00 PST
To: netsig <netsig@tapr.org>
Message-ID: <2F2454B9@smtpdos.space.honeywell.com>
Rendered body type: text/plain

>Lemme know if you decide to pick up the radio and what kind of luck you
>have with it. Only bugaboo is getting the thing re-prommed for the ham
>freqs, as I understand it.

By all means, post this info back to the list.

We have a Syntor here in Tampa that we need to get programmed into
the 430 region as well....

Tnx,
Mike N4CNW

209. Network Simulation

From: Douglas Fajardo <dfajardo@netcom.com>
Date: Mon, 23 Jan 1995 20:00:33 -0800 (PST)
To: NETSIG <netsig@tapr.org>
Message-ID: <Pine.3.89.9501231905.A21438-0100000@netcom13>
Rendered body type: text/plain

I'm attempting to write a simulator for packet, in order to test
a variety of frequency allocation / protocol changes / routing schemes
that I've thought about over the years. (HOW much performance do we
really gain with full duplex? What is the real improvement of using a
Cell approach in a specific network configuration? What effect on thruput
does the various timeouts in AX.25 and X1J have in a complex network situation?)

        (1) Question: Has anyone written such a simulator (I hate to
re-invent the wheel!), and where might I get a copy?

        (2) Question: I have the ARRL AX.25 Version 2.0 standard, and the
proposed revisions from the 7th Computer Networking Conference (Oct
1,1988). Is there any more recent source material detailing the
implementation of AX.25? Especially interesting would be any documentation
describing the 'new improved' P-Persistence algorithm in TAPR's latest
software for the TNC-2.

(3) Question: Apart from reverse-engineering JNOS, is there any documentation available about the TheNet/Netrom protocol?

Thanks in Advance - response at your discretion to either the mail list or to my email address:

Doug Fajardo, Wb6kny
dfajardo@netcom.com

210. Flaming!

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Tue, 24 Jan 1995 01:02:46 GMT
To: netsig@tapr.org
Message-ID: <950123180319370@phx-az.com>
Rendered body type: text/plain

Hi All,
I have just started receiving a rash of crap from several of the users on the net. I want to make one point clear, my system is NOT regurgitating again!!! I have confirmed the messages that blasted out last night were apparently STUCK in queue at the host PRIMENET for some reason. I unsubscribed my offending address immediately after the problem occurred and my queue at this end has been EMPTY for nearly 5 days now. I also sent out my appology several days ago, however it only recently appeared YESTERDAY, January 22, 1995. Before anyone flames, I suggest you READ the headers to note it is OLD traffic. I am watching the spooler and running it MANUALY so I can see that it is not misbehaving again. So to all you inconsiderate flamers, well, you know what you can do.

Dan

----- \---------------/ -----
Arizona Network Intertie Group
"Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP Voice: +1-602-489-7384
P.O. Box 44563 Fax : +1-602-956-2566
Phoenix, Arizona BBS : +1-602-912-0225
85064-4563

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator

211. [NETSIG:828] Re: NETSIG L

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Tue, 24 Jan 1995 00:57:04 GMT
To: netsig@tapr.org
Message-ID: <950123180319369@phx-az.com>
Rendered body type: text/plain

-> From: Greg Jones <gjones@tenet.edu>
-> To: netsig@tapr.org
-> Date: Mon, 23 Jan 95 13:05 CST
-> Subject: [NETSIG:828] Re: NETSIG Loop (fwd)
->
-> This just in from Lee at the TAPR list.
->
-> Will just have to ride the wave (i.e. use the delete key a little mor
-> until the water (i.e. messages) pass.
->
-> Greg
->
-> According to Lee Ziegenhals:
-> >From lcz@datapoint.com Mon Jan 23 09:39:19 1995
-> From: lcz@datapoint.com (Lee Ziegenhals)
-> Subject: Re: NETSIG Loop
-> Date: Mon, 23 Jan 1995 09:39:11 -0600 (CST)
->
-> >Looks like we have another loop on NETSIG.
->
-> I have finally located the offending address. It is "NET@AZNETIG.STA

I took the address out myself by UNSUBSCRIBING....

->
-> It turns out I had already removed that address when we had the probl
-> last time, but apparently it still has a bunch of old messages in its

```
This problem was at the PRIMENET end, as my queue has been empty for nearly
5 days now.  I have confirmed the mail was stuck at PRIMENET my first feed.

-> queue.  I can't filter them out by address because it retains the add
-> of the original sender.  I don't think there's much I can do about it
-> all the old messages get flushed.  I'll take a look.
->
-> Lee
->

-----                      \---------------/                         -----
                     Arizona Network Intertie Group
                 "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP                   Voice: +1-602-489-7384
P.O. Box 44563                               Fax  : +1-602-956-2566
Phoenix,  Arizona                            BBS  : +1-602-912-0225
          85064-4563

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator
```

212. Moderator Review

```
From: Greg Jones <gjones@tenet.edu>
Date: Mon, 23 Jan 1995 23:07:46 -0600 (CST)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199501240507.XAA12963@Alice-Thurman.tenet.edu>
Rendered body type: text/plain
```

```
To try to help eliminate the batch of messages still getting resent to the
list, we will be putting the NETSIG group into full moderation until the
messages come to a stop.

This will slow down the posting of messages just a tad, but will eliminate
the resent messages from appearing on the group.

If you post a message to NETSIG and don't see it appear after 2-3 days,
please repost, it might have gotten zapped by accident.


Cheers - Greg, WD5IVD
```

213. Re: [NETSIG:827] RE: 10khz packet channels--comments wanted (also tardy

```
From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Tue, 24 Jan 95 6:58:23 CST
To: netsig@tapr.org
Message-ID: <9501241258.AA133588@tcet.unt.edu>
Rendered body type: text/plain
```

```
>
>
>
> > to me as well. The cell concept is never going to work here until our
> > frequency
> > coordinators make some attempt to understand the problems with their current
>
> Just my 2 cents - some VHF/UHF freq coordinators will not coordinate
> packet frequencies because they are 'simplex'.
>
> Sounds silly to me. I just asked for a repeater pair. When he asked what
> I was going to use them for, I replied, "Two packet channels 5MHz apart" :)
>
> Around Southern NM, the packet users have to coordinate their frequencies
> among themselves and try to avoid the ATVers, Satellite, White Sands
> Missle Range, and the repeaters.
>
> 73
> Tim, AA5DF
>
> Las Cruces, NM
>
>
>
Tim, et al:

An approach (and this will take some time, it won't happen overnight)
will be for several packet enthusiasts to become active in the
coordinating organization.  Extra work, I know, but eventually you can
```

make packet part of the bandplan agenda instead of waiting for the
existing participants to discover that packet should be mainstreamed
along with other non-voice repeater activities.

Dave

214. Re: [NETSIG:831] Flaming!

From: "Brian A. Lantz" <brian@lantz.com>
Date: Tue, 24 Jan 1995 10:32:43 +0000
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <Pine.3.89.9501241025.N928-0100000@lantz.com>
Rendered body type: text/plain

On Tue, 24 Jan 1995, Daniel Meredith wrote:

> I have just started receiving a rash of crap from several of the
> users on the net. I want to make one point clear, my system is NOT
> regurgitating again!!! I have confirmed the messages that blasted out last
> night were apparently STUCK in queue at the host PRIMENET for some reason. I
> unsubscribed my offending address immediately after the problem occurred
> and my queue at this end has been EMPTY for nearly 5 days now. I also
> sent out my appology several days ago, however it only recently
> appeared YESTERDAY, January 22, 1995. Before anyone flames, I
> suggest you READ the headers to note it is OLD traffic. I am watching
> the spooler and running it MANUALY so I can see that it is not
> misbehaving again. So to all you inconsiderate flamers, well, you
> know what you can do.

If you wish to have the subject dropped, then drop it yourself. This
message and the one that immediately followed it, just keep the topics
hot on everyones list. Seeing that the problem was caused on your end, I
find your anger at others is out of line. Many of the subscribers of this
list PAY for the time they have downloaded over 100 dupes caused by errors
on your end. It has cost them money.

The amount of time your machine has been idle has no bearing on this. If
the loop was caused by your system, then the loop was caused by your
system. Accept the responsibility (as you have) and let it go.

When we err (and we all do) we should EXPECT that the wronged party will
want to vent. Lashing out at them shows a lack of understanding, and a
lack of concern for the error. If you are concerned about this, then just
ignore any venting. If you don't give a darn about the problem you
caused, then just keep fueling the fire....

Brian A. Lantz brian.lantz@lantz.com

REAL PORTION of Microsoft Windows code:

```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

215. Re: [NETSIG:755] BPQ curious beaviour

From: rdonnell@eskimo.com (Robert B. Donnell - KD7NM)
Date: Tue, 24 Jan 1995 01:10:27 -0800
To: netsig@tapr.org
Message-ID: <3GC9lWml1aKE078yn@eskimo.com>
Rendered body type: text/plain

> On LA1B club-station we are using DesqView to multitask an FBB BBS and a
> Packclus Packet Cluster in the same '486 PC. We use BPQ 4.08 as a driver for
> both applications, and via a DRSI-card to the radios. All seems to work fine,
> after a long time of optimizing (hi), except for two BIG and annoying problems:
>
> 1:
> If the traffic is heavy, or link not-so-good, between BPQ and our local TheNet
> node, BPQ sometimes gets confused and sends the same frames over-and-over again,
> even if I can see in the monitor-window that the frames HAVE been ack'ed (and as
> 'I' can see them in the monitor-window of FBB, so can BPQ, hi). BPQ may send the
> SAME frame (with same frame-number) several times in the same transmission. And
> the same transmission may be repeated many times ! So it wastes a lot of
> time.....

This sounds like you may have the 'FRACK' for that port set too low. If
you are not using the polling mode of BPQ, then the BPQ code has no idea
when a packet is actually transmitted. If the FRACK is too low, when
the channel is busy, BPQ may stuff another retry into the TNC before the
TNC has had a chance to transmit its buffer. The solutions are:

1) Increase FRACK - when I used BPQ several years ago I had to set
FRACK to 30 seconds to provide reasonable assurance that the TMN would
have a chance to transmit the first packet when the channel was very
busy.

2) Switch the BPQ polling mode. The TNC then tells the BPQ code when
the buffer is been emptied, and BPQ starts its FRACK timer once the TNC
buffer is empty. Depending on the TNC you are using you may have to
burn new ROMS or upgrade to newer firmware to support this mode.

I may not have the BPQ mode name right - it's been a couple of years
since I've even played with BPQ - but this should be on the right track.

   [Stuff I don't know how to help with deleted...]

>
> 73 de Per, LA6CU @ LA6CU.BRG.R.NOR.EU
>

73, Bob, KD7NM

| Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com |
| Western Washington Amateur IP Address Coordinator   (206) 775-3651 |
----

216. RE: [NETSIG:830] Network Simulation

From: roberts@ses6a.bt.co.uk
Date: Tue, 24 Jan 1995 16:21:18 +0000
To: netsig@tapr.org
Message-ID: <m0rWsuG-00002zC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

The best source of Netrom protocol specification that I have
seen is the original Net/Rom documentation. It covers it
fairly well.

I don't have a simulator but there is a version of TheNet X1J that
runs in a test harness under codeview (or similar debugger) on
a PC. If anyone wants it, ask and it shall be ftp'd.

Dave

P.S. I gather there have been a few discussions about X1J on netsig
recently. My apologies - I've not been ignoring them but the mail
reflector decided it didn't like me some time ago and stopped sending
mail.

217. 10khz spacing - comments wanted!!! (not mf10)

From: imotion@iu.net (Howard Goldstein)
Date: Tue, 24 Jan 1995 15:24:52 -0500
To: netsig@tapr.org
Message-ID: <199501242035.PAA07051@bb.iu.net>
Rendered body type: text/plain

Murphree Michael A <mamurphree@space.honeywell.com> said:
>>FROM Howie N2WX
>>
>>FADCA (Florida) now touts 10Khz channels for packet on LANS separated by as
>>little as 35 miles. The frequency coordinator states that it is acceptable
>>because everyone can run software carrier detect.
>>

>
>On adjacent channels, doubtful with amateur grade equipment....
...
>I'm currently in St. Petersburg separated from Port Charlotte by at least 85

Well you guys in St Pete best get ready for 10khz packet channelization. As
you probably know, Florida is one of the lucky states that vests
coordination for packet frequencies in the hands of packeteers.

Unfortunately it appears our FADCA frequency coordinator decided 10khz

separation is sufficient for LANs as close to each other as 35 miles. For
all I know, scenarios even worse than this may be in the offing. In my
correspondance with the coordinator he has yet to cite _any_ minimum
distance. It is not unreasonable to assume there is _no_ minimum separation.

In other words it seems it'd be entirely possible for Orlando or Clearwater
to be officially coordinated on both 145.05 and 145.04, with all the weight
that the coordinating body's imprimatur carries with the FCC.

***
I solicit figures, well-fashioned arguments, anything to either support or,
as I suspect, rebut the coordinator's assignment of channels with 10khz of
separation from proximate, adjacent, and overlapping LANs.
****

Howie N2WX
imotion@iu.net

218. Re: [NETSIG:838] 10khz spacing - comments wanted!!! (not mf10)

From: tmoulton@ram.net
Date: Tue, 24 Jan 95 22:07:40 EST
To: netsig@tapr.org
Message-ID: <06228.15021573@RAMail>
Rendered body type: text/plain

You better put tight IF's on the Switches so that at least they have a chance
to ignore the adjcent channel. and FORCE users to run low deviation.

219. Re: [NETSIG:838] 10khz spacing - comments wanted!!! (not mf10)

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Tue, 24 Jan 95 20:58:35 MST
To: netsig@tapr.org
Message-ID: <m0rWytc-0001C3C@dptspd.sat.datapoint.com>
Rendered body type: text/plain

I think the most realistic way to settle the 10 KHz channel spacing issue
would be to actually measure the level of the distant station coming in
at your local site location. Make this measurement on the distant node's
assigned frequency using a receiver with a signal level indicator. Make
note of the received signal level. Then inject a signal from a generator
into the test receiver and make note of the -dBM level that equals the
distant signal level.

Using two signal generators with an appropriate isolation network, feed
a modulated tone into the node receiver and adjust the level for minimum
squelch threshold. Feed the 2nd generator on the 10 KHz off-set channel
and adjust it's level to that noted above. If there is indications of
cross modulation or desinsitization, you have proof with which to
(hopefully) decide the issue.

73 de Jack

220. Re: [NETSIG:838] 10khz spacing - comments wanted!!! (not mf10)

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Tue, 24 Jan 95 21:02:28 MST
To: netsig@tapr.org
Message-ID: <m0rWz3Q-0000JkC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

I should have mentioned that for the two generator level test, the measured
signal level from the distant site should be done using the local node
antenna system, for the comparison to be valid...(but you knew that!)

73 de Jack

221. Re: [NETSIG:837] RE: Network Simulation

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 25 Jan 1995 11:54:44 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950125113925.18707A-100000@kazak>
Rendered body type: text/plain

On Tue, 24 Jan 1995 roberts@ses6a.bt.co.uk wrote:

>
> The best source of Netrom protocol specification that I have
> seen is the original Net/Rom documentation. It covers it
> fairly well.

Dave, there was some questions about how you lock a node on the x1j software. I answered they should get the .doc from TheNet 2.06 that Jack Taylor N700 was auther to. It is well worth reading today before you try sysop'ing any node...and that information is not in YOUR documentation...:-)

> I don't have a simulator but there is a version of TheNet X1J that
> runs in a test harness under codeview (or similar debugger) on
> a PC. If anyone wants it, ask and it shall be ftp'd.
> Dave
> P.S. I gather there have been a few discussions about X1J on netsig
> recently. My apologies - I've not been ignoring them but the mail
> reflector decided it didn't like me some time ago and stopped sending
> mail.

There was another nagging question Dave that you could solve by both a default value in setup and words that say "make the darn Broadcast IP 255.255.255.255 and then you can ping your x1j node". So please think about this Dave...

```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu     *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

> >

222. Re: 10khz spacing - comments wanted!!! (not mf10)

From: imotion@iu.net (Howard Goldstein)
Date: Wed, 25 Jan 1995 16:18:13 -0500
To: netsig@tapr.org
Message-ID: <199501252128.QAA16716@bb.iu.net>
Rendered body type: text/plain

Tom w2vy said:
>You better put tight IF's on the Switches so that at least they have a
>chance to ignore the adjcent channel. and FORCE users to run low deviation.

That's going to be fun. We can't even get users to stop repetitive beaconing or use something besides ALL @ ALLUS for their "tower for sale" messages :-(

223. Re: [NETSIG:839] Re: 10khz spacing - comments wanted!!! (not mf10)

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Wed, 25 Jan 1995 19:53:47 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501260353.TAA18672@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> You better put tight IF's on the Switches so that at least they have a chance
> to ignore the adjcent channel. and FORCE users to run low deviation.
>

We've done some work in this area regarding 9600 baud, and showing the bandwidth compared to 1200 baud signals.

Most FM rigs are set to +/- 5 kHz deviation, per factory specs. 1200 baud packet consists of 2 tones, 1200 and 2200 Hz. The Carsons Rule bandwidth is (2*5000) + (2*2200) = 14400 Hz. Obviously, this will not fit in 10 kHz.

Add to this the REQUIRED guardbands and it's easy to see that even 20 kHz leaves a little to be desired.

If you look at specs for typical amateur grade equipment, it becomes
quite obvious that strong adjacent channel signals will get through, even
with 20 kHz spacing.. with 10 kHz, even weak signals will generate QRM.

And once they have packeteers on these 10 kHz channels, do they have any
idea how hard it's going to be to move them off?

 -- mike curtis
wd6ehr@kaiwan.com

224. BPQ and C

From: Stu Mitchell <stu@lab.r1.fws.gov>
Date: Thu, 26 Jan 1995 06:49:42 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.90.950126064620.9062A-100000@ash.lab.r1.fws.gov>
Rendered body type: text/plain

I'm dinking around with bpq and c. Does anybody know how to connect to
the switch from a C program?

There is a set of C functions that comes with the zipped file and I'm
able to send and recieve frames from the switch... now I would like to
figure out how to write simple connect script files... So I think I have
to connect to the switch first, then go from there...

Thanks!

Stu Mitchell   stu@lab.r1.fws.gov
USFWS Forensic Lab   mitchellstu@fws.gov
Ashland, Oregon   *** Follow Me! ***

225. Re: [NETSIG:843] Re: 10khz spacing - comments wanted!!! (not mf10)

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 26 Jan 95 17:41:29 PST
To: netsig@tapr.org
Message-ID: <9501261741.ZM2170@hanko>
Rendered body type: text/plain

On Jan 26, 7:02pm, Howard Goldstein wrote:
> Subject: [NETSIG:843] Re: 10khz spacing - comments wanted!!! (not mf10)
> Tom w2vy said:
> >You better put tight IF's on the Switches so that at least they have a
> >chance to ignore the adjcent channel. and FORCE users to run low deviation.
>
> That's going to be fun. We can't even get users to stop repetitive
> beaconing or use something besides ALL @ ALLUS for their "tower for sale"
> messages :-(

Howie sure got it right!

We have been doing a 10 Khz channel experiment here in the
Portland area for the past few months. It sorta works.
Sometimes. If everyone involved keeps their deviation down.
And is not off freq. And is not too close to each other.
And has good sharp receive filters.

In other words, our experiment indicates that it can be
made to work. We will probably retain a fair number of
split channels, but be very careful to have them on opposite
sides of hills, and far from each other.

It's not so much the actual cross-talk that is a problem,
but the desense created by strong adjacent channel signals
in receivers with "not quite narrow enough" filters.
This desense causes lots of misses and thus lots of retries,
lowering the available data rate.

We have many of these split channels on air, and have just
started to relocate them to other parts of the 2M band to
clean up the mess we created.

Our bottom line assesment is that 10 Khz splits gain us almost
nothing. The increase in retries eats up the gain in total
throughput we had expected.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

226. Topic of the Month: Network Measurement Tools

From: jra@ag9v.ampr.org
Date: Thu, 26 Jan 1995 20:01:49 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199501270101.UAA30248@ag9v.ampr.org>
Rendered body type: text/plain

Hi Guys --

Well, I'm finally digging out from three months of slightly intense work. The cat is beginning to recognize me again...

Since mid-fall I haven't had a chance to perform any of my NetSIG coordination duties, and I apologize for that. I now have my head enough above water to jump back in with both feet (how's that for a double-ended metaphor?

Anyway, there've been several comments lately that NetSIG has become a bit -- well, a lot, really -- unfocused and that the signal to noise ratio has been getting pretty low.

As a way to help that, it's been suggested that we pick a "topic of the month" on which to chew, and hopefully reach some useful conclusions about.

I'd like to start by expanding on a couple of topics that have been floating around lately -- namely:

What tools do we have to measure and profile our networks? Has anyone done an AX.25 protocol analyzer? How do we determine RF characteristics of our paths? What BERs should we be measuring toward? What tools should we use to measure the bandwidth our signals occupy? Etc...

At the end of February, I'll gather up the thread and try to summarize it for the archives.

73,
John

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

227. Re: bpq & c

From: Dirk-Jan Koopman <djk@dirku.demon.co.uk>
Date: Fri, 27 Jan 1995 09:55:19 +0100 (GMT)
To: netsig@tapr.org
Message-ID: <m0rXnOh-0001ZGC@dirku>
Rendered body type: text/plain

>
> I'm dinking around with bpq and c. Does anybody know how to connect to
> the switch from a C program?
>
> There is a set of C functions that comes with the zipped file and I'm
> able to send and recieve frames from the switch... now I would like to
> figure out how to write simple connect script files... So I think I have
> to connect to the switch first, then go from there...

In order to connect to the switch you need to:-

check status is disconnected (ah = 4, es:di -> changed flag))
connect to the switch (ah = 6, cx = 1)
wait until status changed to connected (ah = 4, es:di -> changed flag))
acknowledge change (which has to be done for ALL (underlined 3 times)
                    changes, ah = 5)

now read (ah = 3 es:di -> read buffer) and write (ah = 2, cx = lth,
es:si -> write buffer) to your hearts content. Each write or read is one
whole packet on the interface.

Do check the status regularly and acknowledge whenever it is changed.

Do wait for the status to change when you do a control action like connect
or disconnect - it will NOT happen instantly.

Onec you are connected to the switch, it is as you had connected to it
from your packet station, via more traditional means. So all the normal
commands for connecting to other nodes and stations from a BPQ switch
apply.

But DO remember to check the status........

Dirk

--
Dirk-Jan Koopman   Tel/Fax: +44 1362 696076 Mobile: +44 973 333806
Computer Consultant   Email: djk@dirku.demon.co.uk or G1TLH@GB7TLH.#35.GBR.EU

"We are actually strong believers in the therapeutic qualities of
oddity. It provides a little bit of sanity in the world" - The Bookseller

228. Re: [NETSIG:845] BPQ and C

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 27 Jan 1995 08:00:54 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950127075715.22843D-100000@kazak>
Rendered body type: text/plain

On Thu, 26 Jan 1995, Stu Mitchell wrote:

> I'm dinking around with bpq and c. Does anybody know how to connect to
> the switch from a C program?
>
> There is a set of C functions that comes with the zipped file and I'm
> able to send and recieve frames from the switch... now I would like to
> figure out how to write simple connect script files... So I think I have
> to connect to the switch first, then go from there...
>
> Thanks!
>
> Stu Mitchell   stu@lab.r1.fws.gov
> USFWS Forensic Lab   mitchellstu@fws.gov
> Ashland, Oregon   *** Follow Me! ***
>
>

Hi Stu, Paul, n5faz has written the code to connect jnos to the
bpq switch and it even works! You can get Paul's stuff from ftp.ucsd.edu
in the /tcpip/jnos directory. Or you can talk with Paul via the pbbs
network using n5faz@w5es.tx.usa.na and it should get to him.

```
 ********************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                              *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet     *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12    *
 *                                                                              *
 *        Electrical Engineer with the Army Research Laboratory             *
 *                                                                              *
 ********************************************************************************
```

229. D4-10 & G3RUH

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Fri, 27 Jan 95 09:32:10 CST
To: netsig@tapr.org
Cc: ham-digital@ucsd.edu
Message-ID: <9501271732.AA21293@ingersoll.com>
Rendered body type: text/plain

One end of a UHF 9k6 link we are working on here has a Kantronics D4-10 and
a MFJ1270C with factory installed G3RUH modem. Does anyone have any comments
specific to getting these two rascals interfaced? Is there anything that
needs to be done mod-wise to match signal levles? I haven't yet looked at
the signal levels going in and out, but remember you had to change some
components in the dvr2-2 to get this combo going.

The other end of the link is going to use a Motorola Moxy rig with TAPR modem.

These two seem to be working now on the bench, just need to get the other
end of the link going :-)

Anybody have any war stories of interoperability problems between the TAPR
and G3RUH modems?

Thanks,
Dave N9HKM
--
 Dave Ewaldz INGERSOLL MILLING MACHINE CO.
 N9HKM   Rockford, Illinois, USA

 Internet   - dme@ingersoll.com
 Ma-Bell   - (815)-987-6081
 Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

230. PacComm Phone?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 27 Jan 1995 09:56:39 -0800
To: netsig@tapr.org
Message-ID: <ab4ee3b70e021004621e@[129.46.12.181]>
Rendered body type: text/plain

I need PacComm's phone number. I obtained this about a month ago and
promptly lost it. I have searched all my back files form Netsig, and can't
find it. So please, just one more time. :} Please send direct so as not
to clutter up the NetSig any more than I alread have.

Thanks a lot.
Marvin - WB6PKK
mmunster@qualcomm.com

231. Re: [NETSIG:843] Beaconing :[

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 27 Jan 1995 10:04:03 -0800
To: netsig@tapr.org
Message-ID: <ab4ee4a60f02100499e6@[129.46.12.181]>
Rendered body type: text/plain

>Tom w2vy said:
>>You better put tight IF's on the Switches so that at least they have a
>>chance to ignore the adjcent channel. and FORCE users to run low deviation.
>
>That's going to be fun. We can't even get users to stop repetitive
>beaconing or use something besides ALL @ ALLUS for their "tower for sale"
>messages :-(

Tom, that is another good subject....beaconing.

Does any one have a canned response that can be sent to people to help
persuade them to stop beaconing? I recently published in a couple of local
news letters the reason behing NOT beaconing. I actually reprinted part of
an article that was published in WorldRadio, written by "TAPR John" and his
crew. It expounded on the pros and cons of beaconing. The article was
originaly written in the 80's, however it still holds true today.

I am almost ready to selectivly filter a couple of them off the node. I
don't want to do this, but would like a couple of strong messages I could
send them so that they might get the hint.

Marvin J. Munster
mmunster@qualcomm.com
WB6PKK @ KJ6VC.#SOCA.CA.US.NA
****
"As the fading light of a dying day filtered through the window blinds,
Roger stood over his victim with a smoking .45, surprised at the sernity
that filled him after pumping six slugs into the bloodless tyrant that had
mocked him day after day, and then he shuffled out of the office with one
last look back at the shattered computer terminal lying there like a
silicon armadillo left to rot on the information highway."
****

232. Re: [NETSIG:852] Re: Beaconing :[

From: laborde@kilroy.jpl.nasa.gov (Gregory R. LaBorde)
Date: Fri, 27 Jan 1995 11:04:30 -0800
To: netsig@tapr.org
Message-ID: <199501271904.LAA12887@kilroy.jpl.nasa.gov>

Rendered body type: text/plain

>Does any one have a canned response that can be sent to people to help
>persuade them to stop beaconing?

I am one of the sysops of a full-service BBS in Los Angeles. Periodically
the 'beacon' red-herring circulates and I run a check to see just how much
of it is really going on on our BUSY 2m frequency. What I have found,
repeatedly, that it is not the _users_ whose beacons occupy more than their
fair share of bandwidth, but the very BBSs and NODEs whose operators like
to complain about it. Most of the user beacons I see, with one or two
exceptions, fire off about once per hour. I have found that a quick message
to users with rapid beacons is usually enough to encourage them to back
off. NODEops and SysOps, on the other hand, remain impervious.

-Greg

--
Gregory R. LaBorde - KD6MSM | Internet: laborde@kilroy.jpl.nasa.gov
Jet Propulsion Laboratory | AMPRNet : kd6msm@jpl-gw.w6vio.ampr.org
Systems Engineering - Galileo OET | Packet : KD6MSM@W6VIO.#SOCA.CA.USA.NA
M/S 264-805 4800 Oak Grove Drive | Phone   : (818) 393-1107
Pasadena, CA 91109 |

233. Re: [NETSIG:853] Re: Beaconing :[

From: David Bashaw <dbashaw@Baynetworks.COM>
Date: Fri, 27 Jan 95 12:00:08 PST
To: netsig@tapr.org
Message-ID: <9501272000.AA02249@rimbaud>
Rendered body type: text/plain

When firing off letters to users about beaconing it may be reasonable to
provide hints about 'local customs'. Not every part of the country does
the same thing. I enquired about this when setting up my tnc and got the
reply that hinted that local custom is whatever gets by without generating
too many complaints. Mine fires after 30 min of no traffic. Guidelines
are good, but they are just that, gides, not RULES.

Dave

234. Re: [NETSIG:851] PacComm Phone?

From: zephd@iquest.net (David Zeph)
Date: Fri, 27 Jan 95 15:35 EST
To: netsig@tapr.org
Message-ID: <m0rXxNs-000E95C@dorite.use.com>
Rendered body type: text/plain

PacComm

1,(813) 874-2980 (Human)

1,(800) 223-3511 (Orders Only)

1,(813) 872-8696 (FAX)
1,(813) 874-3078 (BBS)

73 ---. Dave, W9ZRX   (zephd@iquest.net)

>I need PacComm's phone number. I obtained this about a month ago and
>promptly lost it. I have searched all my back files form Netsig, and can't
>find it. So please, just one more time. :} Please send direct so as not
>to clutter up the NetSig any more than I alread have.
>
>Thanks a lot.
>Marvin - WB6PKK
>mmunster@qualcomm.com
>
>
>
>

235. Re: [NETSIG:852] Re: Beaconing :[

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Fri, 27 Jan 95 15:59:03 MST
To: netsig@tapr.org
Message-ID: <m0rXzoX-0000iDC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

Closely related to the topic of beacon QRM is the nice CW IDers that users turn ON because "it's there!"
73 de Jack

236. Re: [NETSIG:843] Re: 10khz spacing - com

From: WCHAST@delphi.com
Date: Fri, 27 Jan 1995 19:11:48 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HMCOK68L0I908AYX@delphi.com>
Rendered body type: text/plain

Howie, I have sort of been following this, and though the 10khz thing was tossed about, as far as I know it will not be taken up.

I am going to re-check on this but I have no plans to coordinate people on 10khz channels in the Tampa Bay area, it is asking for a disaster. It was talked about for the 145.5 to 145.6 area leaving a gard band for the 145.55 activity.

The idea was to promote narrow band signalling type activities and such activities as tropo ect.

But I think that whole thing died and the plan is to stay with the 20khz channels.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121: 3100813077
---

237. Digipeater Question

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Fri, 27 Jan 95 23:56:57 -0500
To: netsig@tapr.org
Message-ID: <9501280456.AA12726@nadc.nadc.navy.mil>
Rendered body type: text/plain

I am putting a TAPR9600/TNC and TEK radios on as a repeater. I am using NOS (JNOS) KISS to the TNC. I am confused - do I need to set full duplex in the param statement? I think of it one way and I say yes but if it was set full the TNC would attempt to TX (the return packet) while a station was sending a packet and since the USER is NOT full duplex this would not work. So thinking out loud I would say NO, But will the TNC transmit (retransmit) the incoming packet immediately when in half duplex?

Doug

238. Re: 10khz spacing - comments wanted!!! (not mf10)

From: imotion@iu.net (Howard Goldstein)
Date: Sat, 28 Jan 1995 00:55:37 -0500
To: netsig@tapr.org
Message-ID: <199501280606.BAA03605@bb.iu.net>
Rendered body type: text/plain

Hank, Chuck, thanks for your comments on 10khz spacing for packet on 2m. The FADCA meeting is not until February and I'd like to survey as many of you as possible. Howie

_____
  Howard Goldstein | "The trouble with children is |
       N2WX | they are not returnable" | imotion@iu.net
   InfoMotion, Inc. | Q. Crisp |
                  http://dingus.n5lyt.datapoint.com/~n2wx

239. Re: [NETSIG:858] Digipeater Question

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sat, 28 Jan 1995 03:59:56 -0800 (PST)

To: netsig@tapr.org
Message-ID: <199501281159.DAA29609@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
>
> I am putting a TAPR9600/TNC and TEK radios on as a repeater. I am
> using NOS (JNOS) KISS to the TNC. I am confused - do I need to set
> full duplex in the param statement? I think of it one way and I
> say yes but if it was set full the TNC would attempt to TX (the return
> packet) while a station was sending a packet and since the USER is
> NOT full duplex this would not work. So thinking out loud I would
> say NO, But will the TNC transmit (retransmit) the incoming packet
> immediately when in half duplex?

I've not used the TAPR modem for duplex repeater operation (regenerator), but
as I understand, you'll want to use the regenerator option in the TAPR modem
for the repeater, and set the TNC to half duplex, so it will observe CSMA for
the NOSbox. The regenerator option should bypass the TNC for repeating
incoming packets.

 -- mike curtis
wd6ehr@kaiwan.com

240. Re: [NETSIG:854] Re: Beaconing :[

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sat, 28 Jan 1995 04:35:27 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501281235.EAA00631@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> When firing off letters to users about beaconing it may be reasonable to
> provide hints about 'local customs'. Not every part of the country does
> the same thing. I enquired about this when setting up my tnc and got the
> reply that hinted that local custom is whatever gets by without generating
> too many complaints. Mine fires after 30 min of no traffic. Guidelines
> are good, but they are just that, gides, not RULES.

This is important.

More important, though, is to always use tact and restraint. Don't personally
attack the beaconer. Just mention that "most folks beacon every hour" (or
whatever), and that, if you want to work other packet stations, the best way
is to check mheard every couple minutes and connect to new callsigns on that
list. Also explain about ssid's and using digi's. I've found that virtually
all over-beaconers are new and simply don't know better. I've always given
them the benefit of the doubt, with excellent results.

Churchill once said "The best way to instill a quality in a man is to impute
it to him." He was correct.

 -- mike curtis
wd6ehr@kaiwan.com

241. Re: [NETSIG:850] D4-10 & G3RUH

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sat, 28 Jan 1995 07:30:02 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950128072730.13542B-100000@kazak>
Rendered body type: text/plain

On Fri, 27 Jan 1995, Dave Ewaldz N9HKM wrote:

> One end of a UHF 9k6 link we are working on here has a Kantronics D4-10 and
> a MFJ1270C with factory installed G3RUH modem. Does anyone have any comments
> specific to getting these two rascals interfaced? Is there anything that
> needs to be done mod-wise to match signal levles? I haven't yet looked at
> the signal levels going in and out, but remember you had to change some
> components in the dvr2-2 to get this combo going.
>
> The other end of the link is going to use a Motorola Moxy rig with TAPR modem.
> These two seem to be working now on the bench, just need to get the other
> end of the link going :-)
>
> Anybody have any war stories of interoperability problems between the TAPR
> and G3RUH modems?

Yes and they are all false. We have a mishmash of g3ruh and tapr
old and tapr new here and they all talk to each other fine. The old tapr
is hard to get adjusted but once done it's done.

-karl

>
> Thanks,
> Dave N9HKM
> --
> Dave Ewaldz INGERSOLL MILLING MACHINE CO.
> N9HKM   Rockford, Illinois, USA
>
> Internet   - dme@ingersoll.com
> Ma-Bell   - (815)-987-6081
> Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam
>
>

242. Re: [NETSIG:851] PacComm Phone?

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sat, 28 Jan 1995 07:34:58 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950128073332.13542C-100000@kazak>
Rendered body type: text/plain

On Fri, 27 Jan 1995, Marvin Munster x5388 wrote:

> I need PacComm's phone number. I obtained this about a month ago and
> promptly lost it. I have searched all my back files form Netsig, and can't
> find it. So please, just one more time. :} Please send direct so as not
> to clutter up the NetSig any more than I alread have.
>
> Thanks a lot.
> Marvin - WB6PKK
> mmunster@qualcomm.com
>
>
>

Try (800) 486-7388

```
 ****************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory              *
 *                                                                           *
 ****************************************************************************
```

243. Re: [NETSIG:850] D4-10 & G3RUH

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Sat, 28 Jan 95 10:27:04 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <15305@k0vm.ampr.org>
Rendered body type: text/plain

In message <9501271732.AA21293@ingersoll.com> netsig@tapr.org writes:
>
> Anybody have any war stories of interoperability problems between the TAPR
> and G3RUH modems?

I have seen not problem with interoperability between the G3RUH
and TAPR 9600 modem.. In fact out 9600 bit regen repeater uses the
TAPR modem and most of the users use various G3RUH derivatives..

>
-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

244. Re: [NETSIG:858] Digipeater Question

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Sat, 28 Jan 95 10:39:54 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <15306@k0vm.ampr.org>
Rendered body type: text/plain

In message <9501280456.AA12726@nadc.nadc.navy.mil> netsig@tapr.org writes:
>
> I am putting a TAPR9600/TNC and TEK radios on as a repeater. I am
> using NOS (JNOS) KISS to the TNC. I am confused - do I need to set
> full duplex in the param statement? I think of it one way and I
> say yes but if it was set full the TNC would attempt to TX (the return
> packet) while a station was sending a packet and since the USER is
> NOT full duplex this would not work. So thinking out loud I would
> say NO, But will the TNC transmit (retransmit) the incoming packet
> immediately when in half duplex?
>
Doug, the TNC goes in the HALF DUPLEX mode.. the signalling on the
TNC DISCONNECT header between the modem and the TNC is such that
the modem/bit regen looks like a normal half duplex modem.
>
-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

245. Re: 10khz spacing - comments wanted!!! (not mf10)

From: "Brian A. Lantz" <brian@lantz.com>
Date: Sat, 28 Jan 1995 13:53:01 +0000
To: netsig@tapr.org
Message-ID: <Pine.3.89.9501281353.P2363-0100000@lantz.com>
Rendered body type: text/plain

On Sat, 28 Jan 1995, Howard Goldstein wrote:

> Hank, Chuck, thanks for your comments on 10khz spacing for packet on 2m.
> The FADCA meeting is not until February and I'd like to survey as many of
> you as possible. Howie

Howie, I apoligize for letting this thread pass my attention. While this
is primarily meant for you, I am sending it to the list, since the state
of Florida and FADCA have been made to look foolish by the irresponsible
actions of a loose cannon.

First, Mr. Paxton was voted OUT of the position of Frequency Co-ordinator
by the body, but was asked (for SOME reason) by FADCA's President to
serve, obviously in a "acting" position, since no reversal of the body's
actions were taken.

Next, the procedures, without getting into details here, prohibit Mr.
Paxton from making an assignment. The assignments are made regionally, with
his position serving as a co-ordinator only. He had NO authority to assign
this frequency.

Also, at a meeting in his own home, when a proposal was addressed
regarding 10khz splits, the FADCA body decided that NO 10khz assignments
would be made until much further study was done and later action taken.

So, to summarize, these actions were those of a single individual. It is
NOT FADCA's policy to assign 10khz frequencies.

Just wanted everyone to know that Floridians had not lost their minds ;-)

Brian A. Lantz   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

246. Re: [NETSIG:847] Topic of the Month: Network Measurement Tools

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Sat, 28 Jan 95 16:18:57 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <15316@k0vm.ampr.org>
Rendered body type: text/plain

I don't know if it qualifies exactly as a "network managment tool" but
I feel that It would open a lot of eyes if ALL packeteers where able
to easily monitor a 'retry rate' metric for each circuit that they use.
This
function should be similar to the 'rr' function of recent versions
of BPQ that report retry rate for each netrom-to-netrom node path.

  I think that what BPQ reports for each path is

    (frames retansmitted) / (total frames passed)

With this report it is easy to determine which paths are marginal
but does not explicitly point to whether it is a propagtion
problem, or a transmit/receive problem on either end (except
by comparison to other paths).

It may be less straight forward to develop a similar metric for
received packets.

If users where able to observe this kind of information for their
own tncs, there may be more to incentive run correct deviation,
delays, etc. and to plan networks rather than
just add more hidden transmitters.

-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

247. Re: [NETSIG:863] Re: PacComm Phone?

From: WCHAST@delphi.com
Date: Sat, 28 Jan 1995 18:46:09 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HME1XU5T428YNEHV@delphi.com>
Rendered body type: text/plain

PacComm Tech line is 813.874.2980

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
----

248. T.O.M. Network Measurement Tools

From: WBRADFORD@delphi.com
Date: Sat, 28 Jan 1995 20:56:44 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HME6IKJOO2909HEZ@delphi.com>
Rendered body type: text/plain

Topic of The Month...

I have a couple of utilities/tools that can provide a great general
snapshot of packet radio frequency activity. While not sophisticated
network analyzers, they sure can indicate which stations are sending
redundant or useless packets, and which stations are passing real
information.

Here is a sample result from a utility I call PackHack:
(file AUG8.440 is a capture buffer file made with Mon On, on the local
440 backbone freq).

The PACKHACK Chronicle for file: AUG8.440 13576 bytes
First date/time stamp: 08/08/94 18:40:24

Originating
   Station   Total   Packet Frame Type
  Callsign   Packets   I   RR   UA   D   REJ

```
   K7EA-7       118     93     17      7      1      0
   WB7TZH        67      1     57      0      0      9
 WB7ULH-4        22      9     12      0      0      1
 WA7JOF-4        41      9     19      0      9      0
   K7EA-6        62     44     12      8      0      0
 KG7FC-12         2      0      2      0      0      0
   #SLC95         9      0      9      0      0      0
  KG7FC-2         1      0      1      0      0      0
```

The other utility is designed to monitor specific stations on a
frequency, and log their packets to a file.

I would be happy to provide these programs to anyone interested.

73 from Bill in Salt Lake City
k7ea @ wb7ulh.ut wbradford@delphi.com

249. Re: [NETSIG:853] Re: Beaconing :[

From: n5wdz@wb5cqu.ampr.org
Date: Sat, 28 Jan 95 19:45:26 cst
To: netsig@tapr.org
Message-ID: <6633@wb5cqu.ampr.org>
Rendered body type: text/plain

from the msgs i read i agree that ot should be LOCAL protocol for packet guidelines...not "just
because".
here in my part of west texas we're just "discovering" packet and haven't had growing pains yet...
so beaconing isnt a problem here.
-tom scott

250. Re: [NETSIG:850] D4-10 & G3RUH

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Sat, 28 Jan 95 21:09 WET
To: netsig@tapr.org
Message-ID: <m0rYP4v-000CDRC@balrog.k8lt.ampr.org>
Rendered body type: text/plain

>
>One end of a UHF 9k6 link we are working on here has a Kantronics D4-10 and
>a MFJ1270C with factory installed G3RUH modem. Does anyone have any comments
>specific to getting these two rascals interfaced? Is there anything that
>needs to be done mod-wise to match signal levles? I haven't yet looked at
>the signal levels going in and out, but remember you had to change some
>components in the dvr2-2 to get this combo going.
>

As I recall the only gotcha was that D4-10 needs a fairly low TX audio
level (50 mv for 3 KHz deviation). That requires cranking the level
pot on the G3RUH almost to zero. Adding a voltage divider out of the
G3RUH might make the adjustment less touchy.

/gary
K8LT

251. Re: [NETSIG:869] T.O.M. Network Measurem

From: WCHAST@delphi.com
Date: Sat, 28 Jan 1995 23:03:27 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HMEAXQWX8I94QVOV@delphi.com>
Rendered body type: text/plain

Sounds interesting, I would like to have a copy. We also have a fellow
here in the Tampa area who has done some reworking of the MONAX program
and extracts a lot of data from it. I will see where I have a copy of it
though I think I may have inadvertently deep sixed it with a delete
done on the disk.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---

252. Re: [NETSIG:853] Re: Beaconing :[

From: jeff@wa1hco.MV.COM (Jeff Millar)
Date: Thu, 26 Jan 1995 23:31:06 +0500
To: netsig@tapr.org
Message-ID: <199501290409.XAA26413@mv.mv.com>
Rendered body type: text/plain

>>Does any one have a canned response that can be sent to people to help
>>persuade them to stop beaconing?
>
>I am one of the sysops of a full-service BBS in Los Angeles. Periodically
>the 'beacon' red-herring circulates and I run a check to see just how much
>of it is really going on on our BUSY 2m frequency. What I have found,
>repeatedly, that it is not the _users_ whose beacons occupy more than their
>fair share of bandwidth, but the very BBSs and NODEs whose operators like
>to complain about it. Most of the user beacons I see, with one or two
>exceptions, fire off about once per hour. I have found that a quick message
>to users with rapid beacons is usually enough to encourage them to back
>off. NODEops and SysOps, on the other hand, remain impervious.
>
>-Greg

Right On!! About 10 years ago, I ran a digipeater from my hilltop location
and announced it's presence with a beacon message. I periodically got lots
of grief from self proclaimed packet experts about my "waste of bandwidth"
for a 2 second message every 30 minutes. But, I happen to understand CSMA/CD
and related protocols quite well and had tweaked my TNC's DWAIT timing
parameter to wait for idle channel time longer than anyone else...in effect,
I had set my priority lower than anyone else. Thus greatly lowering the
probability that anyone wanted to use the channel at the time of my beacon.

However, it gradually dawned on me that the hidden transmitter problem
caused vastly more lost bandwidth (through collisions) than beaconing, and
digipeaters caused most of the collisions. Once I realized that, I shut
down the digipeater.

Many packet people just don't seem to understand the concept of DWAIT's and
how to use them to control the consumption of priority bandwidth.

jeff, wa1hco

253. Re: [NETSIG:849] Re: BPQ and C

From: Stu Mitchell <stu@lab.r1.fws.gov>
Date: Sun, 29 Jan 1995 04:33:04 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.90.950129043206.29291B-100000@ash.lab.r1.fws.gov>
Rendered body type: text/plain

On Fri, 27 Jan 1995, Klarsen wrote:

>
>
> On Thu, 26 Jan 1995, Stu Mitchell wrote:
>
> > I'm dinking around with bpq and c. Does anybody know how to connect to
> > the switch from a C program?

> bpq switch and it even works! You can get Paul's stuff from ftp.ucsd.edu
> in the /tcpip/jnos directory. Or you can talk with Paul via the pbbs
> network using n5faz@w5es.tx.usa.na and it should get to him.
>
>

Thanks Carl... I'll go grab it and see how to make it work!

Stu Mitchell   stu@lab.r1.fws.gov
USFWS Forensic Lab   mitchellstu@fws.gov
Ashland, Oregon   *** Follow Me! ***

254. Re: [NETSIG:867] Re: Topic of the Month: Network Measurement Tools

From: Stu Mitchell <stu@lab.r1.fws.gov>
Date: Sun, 29 Jan 1995 04:44:47 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.90.950129044141.29291D-100000@ash.lab.r1.fws.gov>
Rendered body type: text/plain

On Sat, 28 Jan 1995, Al Groff - K0VM wrote:

> I don't know if it qualifies exactly as a "network managment tool" but

> I feel that It would open a lot of eyes if ALL packeteers where able
> to easily monitor a 'retry rate' metric for each circuit that they use.
> This

I used monax25 to explain the poor RF paths here. The packets versus time
plot was really interesting... not surprising, but it was fun to show
everybody how the activity varied during the day. I think the paper that
goes along with the program is worth reading... in fact, it should be
required reading for anybody setting up networks. :)

Stu Mitchell   stu@lab.r1.fws.gov
USFWS Forensic Lab   mitchellstu@fws.gov
Ashland, Oregon   *** Follow Me! ***

255. Re: [NETSIG:848] Re: bpq & c

From: Stu Mitchell <stu@lab.r1.fws.gov>
Date: Sun, 29 Jan 1995 05:00:33 +0000 (GMT)
To: Dirk-Jan Koopman <djk@dirku.demon.co.uk>
Cc: netsig@tapr.org
Message-ID: <Pine.LNX.3.90.950129044643.29291E-100000@ash.lab.r1.fws.gov>
Rendered body type: text/plain

On Fri, 27 Jan 1995, Dirk-Jan Koopman wrote:

> >
> > I'm dinking around with bpq and c. Does anybody know how to connect to
> > the switch from a C program?
> >
> > There is a set of C functions that comes with the zipped file and I'm
> > able to send and recieve frames from the switch... now I would like to
> > figure out how to write simple connect script files... So I think I have
> > to connect to the switch first, then go from there...
>
> In order to connect to the switch you need to:-
>
> check status is disconnected (ah = 4, es:di -> changed flag))
> connect to the switch (ah = 6, cx = 1)
> wait until status changed to connected (ah = 4, es:di -> changed flag))
> acknowledge change (which has to be done for ALL (underlined 3 times)
>   changes, ah = 5)
>

Dirk... thanks... I'm using the bpq.obj and bpq.h files that come with
the latest release. I think they implement the above calls. But when I
used the set_session() call, I got some really weird results. After I
made the call [set_session(s, CON_TO_NODE)], s changed! I think the
call might be using intr(intno, *preg) instead of int86x(intno, *inregs...).
As I read the manual, intr() puts the value of the regs back into *preg.
And maybe somehow 's' is changed...

After I wrote the few lines of code to implement your suggestions (and
those of bpqhost.doc), all worked well...

Also, I found that bpq.h/bpq.obj doesn't have the 'loaded' function.
(as the docs spell out). But now that I know how to set up the regesters
and execute a software interrupt, it won't be a problem!

Thanks again...

Stu Mitchell   stu@lab.r1.fws.gov
USFWS Forensic Lab   mitchellstu@fws.gov
Ashland, Oregon   *** Follow Me! ***

256. Re: [NETSIG:869] T.O.M. Network Measurement Tools

From: jra@ag9v.ampr.org
Date: Sun, 29 Jan 1995 07:35:29 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199501291235.HAA05251@ag9v.ampr.org>
Rendered body type: text/plain

You (WBRADFORD@delphi.com) write:
>
>Topic of The Month...
>
>I have a couple of utilities/tools that can provide a great general
>snapshot of packet radio frequency activity. While not sophisticated
>network analyzers, they sure can indicate which stations are sending

>redundant or useless packets, and which stations are passing real
>information.

I'd LOVE to have these programs available! If you can get them to me
(uuencoded in email is fine) I will upload them to the NetSIG FTP area
at tapr.org.

BTW, that goes for any software or docs that come out of this discussion...
I'd love to build a library of these tools at the TAPR ftp server.

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

257. TOM: A Tool I'd Like to See

From: jra@ag9v.ampr.org
Date: Sun, 29 Jan 1995 07:46:05 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199501291246.HAA05277@ag9v.ampr.org>
Rendered body type: text/plain

OK, having started this, my dream is a software protocol analyzer for AX.25.
Picture two programs:

The first polls bits on a parallel port for RX data (and optionally RX
clock; having clock available should let it work at much higher speeds)
and simply dumps what it sees into a memory buffer (either regular memory
or EMS). With today's CPUs, polling should work at any speeds we're likely
to see on RF any time soon. This piece of the software should be small and
maybe written in asm for maximum performance. It would allow you to capture
the buffer to disk for further processing.

The RX data input would come from whatever demodulator you were using; it
would <NOT> come from a TNC -- we want to see the raw data, before any
processing takes place.

Then, the second program would operate on either the memory buffer or a disk
file, and do analysis at the HDLC, AX.25, NetROM, IP, or whatever level you'd
want. It would display frames, calculate CRCs, let you look at flags, etc.
This piece could be written in a high level language and have whatever bells
and whistles you'd want to make the output look pretty and/or useful.

A tool like this could tell us a lot about TXDs (by how many flags we see at
the beginning of frames), protocol efficiencies, sources of errors, and other
neat things.

Anyone want to write it?

John
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

258. Re: [NETSIG:869] T.O.M. Network Measurement Tools

From: rmackay@bud.peinet.pe.ca (Ron VE1AIC)
Date: Sun, 29 Jan 1995 11:52:05 -0400
To: netsig@tapr.org
Message-ID: <9501291552.AA20247@bud.peinet.pe.ca>
Rendered body type: text/plain

>Topic of The Month...
>
>I have a couple of utilities/tools that can provide a great general
>snapshot of packet radio frequency activity. While not sophisticated
>network analyzers, they sure can indicate which stations are sending
>redundant or useless packets, and which stations are passing real
>information.
>
>Here is a sample result from a utility I call PackHack:
>(file AUG8.440 is a capture buffer file made with Mon On, on the local
>440 backbone freq).
>
>
>The PACKHACK Chronicle for file: AUG8.440 13576 bytes
>First date/time stamp: 08/08/94 18:40:24
>
>Originating

```
>   Station       Total      Packet Frame Type
>  Callsign     Packets      I     RR     UA      D    REJ
>
>The other utility is designed to monitor specific stations on a
>frequency, and log their packets to a file.
>
>I would be happy to provide these programs to anyone interested.
>
>73 from Bill in Salt Lake City
>k7ea @ wb7ulh.ut     wbradford@delphi.com
>
 Sounds like a great tool Bill. I got ahold of something call MONITOR awhile
back that's similar, written by NK6K in 1987. It was a good idea but
I didnt get it to work the way I wanted.
I'm interested in the number Resent packets and Total Packet count per
call.

73 - Ron
ve1aic@ve1aic.pe.can.noam
```

259. Re: [NETSIG:867] Re: Topic of the Month: Network Measurement Tools

```
From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sun, 29 Jan 1995 13:07:40 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501292107.NAA00847@kaiwan009.kaiwan.com>
Rendered body type: text/plain
```

```
>
> I don't know if it qualifies exactly as a "network managment tool" but
> I feel that It would open a lot of eyes if ALL packeteers where able
> to easily  monitor a 'retry rate' metric for each circuit that they use.
> This
> function should be similar to the 'rr' function of recent versions
> of BPQ that report retry rate for each netrom-to-netrom node path.
>
>   I think that what BPQ reports for each path is
>
>     (frames retansmitted) / (total frames passed)
>
> With this report it is easy to determine which paths are marginal
> but does not explicitly point to whether it is a propagtion
> problem, or a transmit/receive problem on either end ( except
> by comparison to other paths ).
>
> It may be less straight forward to develop a similar metric for
> received packets.
>
> If users where able to observe this kind of information for their
> own tncs, there may be more to incentive run correct deviation,
> delays, etc. and to plan networks rather than
> just add more hidden transmitters.

This is an excellent idea.  It would be even better with a slight hardware
modification.  This would be in the form of a simple intermod detection
circuit.  This would measure spurious RF generated by having transmitters on
adjacent frequencies without circulators or cavities.  When retries exceed
successful packets by more than an order of magnitude, it would dial a
telephone number, and a guy named "Bubba" would be dispatched to the site to
"have a little chat" with the sysop.

 --  mike curtis
wd6ehr@kaiwan.com
```

260. Re: [NETSIG:870] Re: Beaconing :[

```
From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sun, 29 Jan 1995 13:28:55 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199501292128.NAA03313@kaiwan009.kaiwan.com>
Rendered body type: text/plain
```

```
>
> from the msgs i read i agree that ot should be LOCAL protocol for packet guidelines...not "just
because".
> here in my part of west texas we're just "discovering" packet and haven't had growing pains yet...
> so beaconing isnt a problem here.

Very true.  when packet was beginning, and there were very few packet
stations, beacons made a lot of sense.  It sounds like your situation falls
close to this situation.
```

Here in LA, where we speak about "packet stations per square inch" (slight
hyperbole, but darn close!), beacons really aren't needed. If one wants to
beacon, once or twice an hour should be plenty. just often enough to make
sure you're still in the mheard list - and yes, it can scroll off the list in
30 minutes.

The best way to let people know you're there is to be there. Check MHeard,
and connect to stations on the list. There's nothing more annoying than some
guy shooting off beacon after beacon asking people to connect, only to find a
personal mailbox.

 -- mike curtis
wd6ehr@kaiwan.com

261. icom ic3200A & 9.6k

From: wx7y@wx7y-12.ampr.org
Date: Sun, 29 Jan 95 18:26:18
To: netsig@tapr.org
Message-ID: <237@wx7y-12.ampr.org>
Rendered body type: text/plain

Hi all I didn't get any replys from my message asking for info about mod-ing
the Icom 3200a dual band mobile for 9600 baud so I got into it and did the
dirty work, pac-comm tech support has some info but I found it to be wrong
in my case here is what I have found to work.
connect the rec data to pin 9 of ic1 it's a tk10424 audio IC (paccomm said to
connect to pin 11) on the txd for UHF I hooked to the UHF tone input to the modulator circuit which is
"R23 it is a 22k resisto
r. I didn't connect the vhf
side but I would think that connecting the txd to the VHF tone input would
do the same for VHF (paccomm said to connect to the junction of r2 and r3 for
dual band opperation which didn't work for me and also another one of there
documentation said to connect to the varactors D1 for UHF and D3 for VHF
these Varactors are barried in wax and takes quite a bit to get to. I found
that connecting to the "UHF Tone" lead worked just as well as connecting to
D1 and didn't take but a few minutes to do. Anyway this may not be the very
best places to get the proper signals but it was the best I found for thru-
put at 9.6k I hope this may help someone else as it should be just a 10
minute job to 9600 a IC3200 radio 73
de Bret WX7Y
73 de Bret WX7Y 44.40.26.1
packet bbs address WX7Y@WX7Y.#SEUT.UT.USA.NA
EMAIL wx7y@egate.nc7f.ampr.org 44.40.26.193

262. RE: [NETSIG:857] Re: 10khz spacing - com

From: Murphree Michael A <mamurphree@space.honeywell.com>
Date: Mon, 30 Jan 95 08:41:00 PST
To: netsig <netsig@tapr.org>
Message-ID: <2F2D2331@smtpdos.space.honeywell.com>
Rendered body type: text/plain

Chuck,

Paxton already posted some 10khz channel allocations about a week or two
ago.
I believe they were in his own backyard...

Mike

>From: netsig
>To: netsig
>Subject: [NETSIG:857] Re: 10khz spacing - com
>Date: Friday, January 27, 1995 6:23PM
>
>Howie, I have sort of been following this, and though the 10khz thing was
>tossed about, as far as I know it will not be taken up.
>
>I am going to re-check on this but I have no plans to coordinate people
>on 10khz channels in the Tampa Bay area, it is asking for a disaster. It
>was talked about for the 145.5 to 145.6 area leaving a gard band for the
>145.55 activity.
>
>The idea was to promote narrow band signalling type activities and such
>activities as tropo ect.
>
>But I think that whole thing died and the plan is to stay with the 20khz
>channels.
>

```
>------------------------------------------------------------------------
>Chuck Hast
>No Dumb Operating System here, only OS/2. Soon to add LINUX.
>Delphi:   wchast@delphi.com
>AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
>ampr.org: kp4djt.ampr.org
>AX.121:   3100813077
>------------------------------------------------------------------------
>
```

263. Re: [NETSIG:863] Re: PacComm Phone?

```
From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Mon, 30 Jan 1995 09:40:47 -0800
To: netsig@tapr.org
Message-ID: <ab52d4f3230210048043@[129.46.12.181]>
Rendered body type: text/plain
```

Thanks for the information.

```
>        Try (800) 486-7388
>
>
>
> ********************************************************************************
> *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
> *                                                                              *
> *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet     *
> *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12    *
> *                                                                              *
> *        Electrical Engineer with the Army Research Laboratory             *
> *                                                                              *
> ********************************************************************************


Marvin J. Munster
mmunster@qualcomm.com
WB6PKK @ KJ6VC.#SOCA.CA.US.NA
**********************************************************
"As the fading light of a dying day filtered through the window blinds,
Roger stood over his victim with a smoking .45, surprised at the sernity
that filled him after pumping six slugs into the bloodless tyrant that had
mocked him day after day, and then he shuffled out of the office with one
last look back at the shattered computer terminal lying there like a
silicon armadillo left to rot on the information highway."
**********************************************************
```

264. Re: [NETSIG:883] Re: 10khz spacing - com

```
From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Mon, 30 Jan 95 12:31:31 MST
To: netsig@tapr.org
Message-ID: <m0rZ1tU-0000W9C@dptspd.sat.datapoint.com>
Rendered body type: text/plain
```

The original msg about 10 KHz spacing spoke in terms of node sites separated
35 miles or more from the local system. Off-hand one could make a case
(valid or not) that signal attentuation over such a distance would not cause
interference. There is however, the likelyhood of a LOCAL server (BBS,
DXCLUSTER, or SMTP gateway), for any variety of reasons, accessing the
distant node. When this happens, strong local stations only separated by
10 KHz WILL be the cause of co-channel interference.

Thus it makes sense that local frequency coordinators look carefully at
establishing "clear space" between systems. The sharpest receiver front-
end filters for the two meter range that I'm aware of, are 4-pole crystal
filters. Without looking at the specs, I seem to recall that about 40 KHz
or so from the center frequency, they offer up to 50 dB of attenuation.
They typically have an insertion loss of 6 dB. As a general rule, I'd
recommend that systems be separated by at least 50 KHz since the state
of the art won't allow front-end receiver filtering much closer than that.

I don't believe crystal front-end filters are available above the two meter
band. This means that system spacing should be considered in terms of
separation allowed by a combination of distance and standard cavity filter
technology.

73 de Jack

265. Re: [NETSIG:869] T.O.M. Network Measurement Tools

From: martins@abqato.scs.philips.com (Steve Martin x7274)
Date: Mon, 30 Jan 1995 17:49:43 +0700
To: netsig@tapr.org
Message-ID: <9501310049.AA13378@abqn42.sca.philips.com>
Rendered body type: text/plain

Hey Bill -

How can I get a copy of you program (source code?)?

Thanks & 73.


```
********************************************************************************
Steve Martin, Software Engineer
Albuquerque Test Operations - Philips Semiconductors, Albuquerque, NM

VAXmail ID:  ABQCLU::MARTINS                          Ph:  505-822-7274
  Internet:  martins@scs.philips.com                 FAX:  505-822-7237
    PACKET:  NR7P@WB2ARS.NM.USA.NOAM               Pager:  505-857-9078
             nr7p@nr7p.nm.ampr.org           (44.30.0.48 on 145.09 Mhz)

******************  Opinions expressed are purely my own.  **********************
```


266. Re: [NETSIG:875] Re: Topic of the Month: Network Measurement Tools

From: martins@abqato.scs.philips.com (Steve Martin x7274)
Date: Mon, 30 Jan 1995 17:54:08 +0700
To: netsig@tapr.org
Message-ID: <9501310054.AA13381@abqn42.sca.philips.com>
Rendered body type: text/plain

Hi Stu -

> I used monax25 to explain the poor RF paths here. The packets versus time
> plot was really interesting... not surprising, but it was fun to show
> everybody how the activity varied during the day. I think the paper that
> goes along with the program is worth reading... in fact, it should be
> required reading for anybody setting up networks. :)
>
> Stu Mitchell   stu@lab.r1.fws.gov
> USFWS Forensic Lab   mitchellstu@fws.gov
> Ashland, Oregon   *** Follow Me! ***
>

Where does one find a copy of 'monax25'. We are trying to organize our network here and I would
like to read that 'choice paper'.

Thanks & 73.


```
********************************************************************************
Steve Martin, Software Engineer
Albuquerque Test Operations - Philips Semiconductors, Albuquerque, NM

VAXmail ID:  ABQCLU::MARTINS                          Ph:  505-822-7274
  Internet:  martins@scs.philips.com                 FAX:  505-822-7237
    PACKET:  NR7P@WB2ARS.NM.USA.NOAM               Pager:  505-857-9078
             nr7p@nr7p.nm.ampr.org           (44.30.0.48 on 145.09 Mhz)

******************  Opinions expressed are purely my own.  **********************
```


267. Re: [NETSIG:887] Re: Topic of the Month: Network Measurement Tools

From: Stu Mitchell <stu@lab.r1.fws.gov>
Date: Tue, 31 Jan 1995 02:03:47 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.90.950131020131.12261B-100000@ash.lab.r1.fws.gov>
Rendered body type: text/plain

On Mon, 30 Jan 1995, Steve Martin x7274 wrote:

> Hi Stu -
>
> > I used monax25 to explain the poor RF paths here. The packets versus time
> > plot was really interesting... not surprising, but it was fun to show
> > everybody how the activity varied during the day. I think the paper that
> > goes along with the program is worth reading... in fact, it should be
> > required reading for anybody setting up networks. :)
>
> Where does one find a copy of 'monax25'. We are trying to organize our network here and I would
> like to read that 'choice paper'.

Check out ftp.ucsd.edu/hamradio/packet/monax25/monax25.zip...

The thing to remember is that it works on the standard input.. so you
have to be familiar with redirection in DOS.

Stu Mitchell   stu@lab.r1.fws.gov
USFWS Forensic Lab   mitchellstu@fws.gov
Ashland, Oregon   *** Follow Me! ***
Wildlife Foreniscs http://ash.lab.r1.fws.gov

268. Re: [NETSIG:883] Re: 10khz spacing - com

From: WCHAST@delphi.com
Date: Tue, 31 Jan 1995 00:48:39 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HMH76WX21U9BVKRO@delphi.com>
Rendered body type: text/plain

Yes, that is going to be a mess, ohh well it is his face that gets egg
on it, too bad it is being touted as done under FADCA.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077

269. AX.25 Channel Analyzer

From: alynch@wpdis01.wpafb.af.mil (Andrew Lynch)
Date: Tue, 31 Jan 95 08:05:00 -0500 <Tue Jan 31 08:05:00 1995>
To: netsig@tapr.org
Message-ID: <9501311305.AA15516@wpdis01.wpafb.af.mil>
Rendered body type: text/plain

NETSIG Gurus:

I had an idea for 1200 bps TCP/IP channels, but those 9600 bps or greater
are going to be a real challenge. Any ideas?

73 de N8VEM

Andrew Lynch

****

Hi Andy --

Thanks for the info. This might work well for 1200 baud channels, but I'd
like to see something that was tuned to work at higher speeds (and not tied
specifically to the Baycom modem). But this could be a very good starting
point. Why don't you post this message to netsig so others can chew on it.

John

> John:
>
> I have a suggestion regarding this...
>
> The program you describe sounds a lot like a BAYCOM style modem and using
> EZPACKET. There is a mode (I dont know what its called, but I used it when
> building my station) that records everything, including regular packets-all
> kinds, packets with CRC errors, voice, blips, noise, static, and anything
> else that breaks squelch on the radio and logs it to a disk file. These
> files can get quite large if the squelch isn't set right.
>
> The BAYCOM style modem is just a modem, it has no TNC-like "brains" built in
> to filter out data. It will try to decode anything that the radio sends
> to the audio channel, regardless if they are packets or pager noise. The
> software on the PC does all the decoding and manually sorts out the data
> from the pure garbage. There is a mode in EZPACKET that records EVERYTHING.
> This may be useful. If not, OK.
>
> The second program would basically parse the output from EZPACKET. Call me
> or send email if you'd like to discuss more. I have both EZPACKET and a
> BAYCOM modem. Hopefully I wont be needing either after I get a real TNC!
>

> 73 de N8VEM
>
> Andrew Lynch
>
> **********
>
> Date: Sun, 29 Jan 1995 07:46:05 -0500 (EST)
> From: jra@ag9v.ampr.org
> To: netsig@tapr.org
> Subject: TOM: A Tool I'd Like to See
> Message-ID: <199501291246.HAA05277@ag9v.ampr.org>
>
> OK, having started this, my dream is a software protocol analyzer for AX.25.
> Picture two programs:
>
> The first polls bits on a parallel port for RX data (and optionally RX
> clock; having clock available should let it work at much higher speeds)
> and simply dumps what it sees into a memory buffer (either regular memory
> or EMS). With today's CPUs, polling should work at any speeds we're likely
> to see on RF any time soon. This piece of the software should be small and
> maybe written in asm for maximum performance. It would allow you to capture
> the buffer to disk for further processing.
>
> The RX data input would come from whatever demodulator you were using; it
> would <NOT> come from a TNC -- we want to see the raw data, before any
> processing takes place.
>
> Then, the second program would operate on either the memory buffer or a disk
> file, and do analysis at the HDLC, AX.25, NetROM, IP, or whatever level
> you'd
> want. It would display frames, calculate CRCs, let you look at flags, etc.
> This piece could be written in a high level language and have whatever bells
> and whistles you'd want to make the output look pretty and/or useful.
>
> A tool like this could tell us a lot about TXDs (by how many flags we see at
> the beginning of frames), protocol efficiencies, sources of errors, and
> other
> neat things.
>
> Anyone want to write it?
>
> John

270. Re: [NETSIG:875] Re: Topic of the Month: Network Measurement Tools

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Tue, 31 Jan 95 12:29:27 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <15430@k0vm.ampr.org>
Rendered body type: text/plain

In message <Pine.LNX.3.90.950129044141.29291D-100000@ash.lab.r1.fws.gov> netsig@tapr.org writes:
> On Sat, 28 Jan 1995, Al Groff - K0VM wrote:
>
> > I don't know if it qualifies exactly as a "network managment tool" but
> > I feel that It would open a lot of eyes if ALL packeteers where able
> > to easily monitor a 'retry rate' metric for each circuit that they use.
> > This
>
> I used monax25 to explain the poor RF paths here. The packets versus time
> plot was really interesting... not surprising, but it was fun to show

I guess what I am really suggesting is that in addition to monax25
and similar tools, I think it would be very useful if each packet
user would have available a 'retry rate' metric that as build
into his own tnc/nos/bpq/etc. Users need to be able to compare
retry rates for each of their circuits and with other users.. I
might lead to conclusions that 'something needs to be fixed'
rather than just frustation over slow circuits...

>
-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

271. sigoff netsig

From: ALYNCH@WPGATE1.WPAFB.AF.MIL (Andrew J. Lynch)
Date: Tue, 31 Jan 1995 13:20 EST
To: netsig@tapr.org
Message-ID: <m0rZNDH-000LAeC@mailgate.wpafb.af.mil>
Rendered body type: text/plain

Form: Memo
Text: (1 line follows)
signoff netsig
Use Proportional Font: true
Attachment Count: 0

February 1995

Original source file: netsig.9502
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9502

1. Channel Access

```
From: tmoulton@ram.net
Date: Wed, 01 Feb 95 09:40:01 EST
To: netsig@tapr.org (netsig (tapr ))
Message-ID: <06272.15021573@RAMail>
Rendered body type: text/plain
```

Here's my bid for TOM.

Has anyone done any work on better channel access protocols?

I know about Slottime, etc. but they require that the users set parameters in a friendly manner.

If we built a daughter board that controlled channel access it would no longer would be controlled by the user. It could even do things like automatically adjust TXD, Deviation, etc based upon what the Local Switch/Node/Master heard and commanded.

Any Interest?

tom, w2vy

---

2. ARRL Digital Conference

```
From: "Rick Whiting" <Rick_Whiting@ATK.COM>
Date: 3 Feb 1995 17:16:11 -0600
To: "Post hfsig TAPR" <hfsig@tapr.org>, "Post Netsig TAPR" <netsig@tapr.org>
Cc: "Dave Bushong" <dbushong@wang.com>, "Kay Craigie" <4087290@mcimail.com>,
        "Cornell Drentea" <cdrentea@AOL.COM>, "Gary Garriott" <garyg@vita.org>,
        "David Henderson" <N3EOY^aN3EOY@p10.f165.n109.z1.fidonet.org>,
        "Craig McCartney" <73126.3260@compuserve.com>,
        "Bo McLean" <487-1998@mcimail.com>,
        "Richard Muffley" <rmuffley@vita.org>,
        "All Participants NETF" <netf@jriver.com>,
        "Paul Newland" <paul.newland@att.com>,
        "Vic Poor" <71151.720@compuserve.com>,
        "Eric Rosenberg" <ericr@vita.org>,
        "Dale Sinner" <73074.435@compuserve.com>,
        "David Speltz" <5571530@mcimail.com>
Message-ID: <199502032311.RAA27227@ATK.COM>
Rendered body type: text/plain
```

Subject: Time:5:07 PM
OFFICE MEMO ARRL Digital Conference Date:2/3/95

Announcement and First Call For Papers

ARRL DIGITAL COMMUNICATIONS CONFERENCE
September 8-10
Arlington, Texas, U.S.A.

Mark your calendar and start making plans to attend the year's premier event in digital communications. The 14th Annual ARRL Digital Communications Conference will be held September 8-10, 1995, in Arlington, Texas -- just minutes from the Dallas/Ft. Worth Airport. Co-hosts for the Conference are TAPR and the Texas Packet Radio Society.

The ARRL Digital Communications Conference is an international forum for radio amateurs and experts in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications.

Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the Conference is not required for publication. Papers are due by July 21, 1995, and should be submitted to Maty Weinberg, ARRL, 225 Main St., Newington, CT 06111 U.S.A. or via Internet at lweinberg@arrl.org. Please contact Maty for detailed format requirements.

The hotel/conference center is extremely well suited and well sited for this event. They regularly host other communications-related events and staff

members are very familiar with the sight of satellite dishes springing up on
the lawn! They and we are looking forward to a tremendous conference. We
hope YOU can be part of it!

For more information on the Conference, registration, and hotel reservations
please contact TAPR at the address below:

TAPR
8987-309 E. Tanque Verde Rd. #337
Tucson, AZ 85749-9399, U.S.A.
Phone: (817) 383-0000
Fax: (817) 566-2544
Internet: tapr@tapr.org

[2-3-95]

3. TNC hardwire network????

From: jlarson@micron.net (Jim Larson)
Date: Fri, 3 Feb 95 23:26 MST
To: netsig@tapr.org
Message-ID: <m0radwZ-000QWrC@mis01.micron.net>
Rendered body type: text/plain

Has anyone ever experimented with hooking several TNCs together (radio side)
without radios? I have the need to hook 4 computers together in a TCP/IP
environment and have a 2 mile long dedicated phone cable. I was wondering
if a person could short the TX and RX audio leads together on each of the
4 TNCs and hook this shorted pair to the common phone wire. I can't think
why it wouldn't work off the top of my head...but thought I would ask the
experts.

         Tnx and 73

Jim Larson - KK7A   Internet: jlarson@micron.net
Boise, Idaho
----

4. Re: [NETSIG:895] TNC hardwire network????

From: tmoulton@ram.net
Date: Sat, 04 Feb 95 10:08:24 EST
To: netsig@tapr.org
Message-ID: <06302.15021573@RAMail>
Rendered body type: text/plain

>
>Has anyone ever experimented with hooking several TNCs together (radio side)
>
>without radios? I have the need to hook 4 computers together in a TCP/IP
>environment and have a 2 mile long dedicated phone cable. I was wondering
>if a person could short the TX and RX audio leads together on each of the
>4 TNCs and hook this shorted pair to the common phone wire. I can't think
>why it wouldn't work off the top of my head...but thought I would ask the
>experts.
>
>   Tnx and 73

Is the phone line 4 wire?

there are two choices that I can think of:

Get a Radio Multiplier, which allows upto 4 tnc's to share one radio.

    Use one RM on each end of the phone line on the radio port and
    hook two (?) tnc's on each end.
    [NX2P Electronics (201) 729-NX2P]

Use an RS-232 to RS-485 converter (Needs 2 wire line, but is not audio)

    You would then run the PC's into the RS485 converters into the phone
    line with NO TNC's. You would need to run something other than KISS.
    (Can 2 or more PC's talk KISS together?)
    [Amateur Networking Supply (201) 666-9776]

Tom, W2VY

5. Re: TNC hardwire network????

From: imotion@iu.net (Howard Goldstein)
Date: Sat, 04 Feb 1995 23:25:12 -0500

To: netsig@tapr.org
Message-ID: <199502050431.XAA24564@bb.iu.net>
Rendered body type: text/plain

jlarson@micron.net (Jim Larson) writes:

>Has anyone ever experimented with hooking several TNCs together (radio side)
>without radios? I have the need to hook 4 computers together in a TCP/IP
>environment and have a 2 mile long dedicated phone cable. I was wondering
>if a person could short the TX and RX audio leads together on each of the
>4 TNCs and hook this shorted pair to the common phone wire. I can't think
>why it wouldn't work off the top of my head...but thought I would ask the
>experts.

It will work. Try to gate everyone's txaudio with PTT by way of an analog
switch. Don't forget to protect against transients on the phone line!

Howie

____
  Howard Goldstein | "The trouble with children is |
       N2WX | they are not returnable" | imotion@iu.net
   InfoMotion, Inc. | Q. Crisp |
                    http://dingus.n5lyt.ampr.org/~n2wx

6. Re: [NETSIG:897] Re: TNC hardwire network????

From: wx7y@egate.nc7f.ampr.org
Date: Sun, 05 Feb 95 09:50:02 mdt
To: netsig@tapr.org
Message-ID: <447@egate.nc7f.ampr.org>
Rendered body type: text/plain

Jim you may also want to couple the packet audio to the phone line together
with a isolation transformer to keep the ground off the phone line, The
telephone line is ballanced 600 ohm and the packet is unballanced (requires
a groud for the return path) if you connect the packet audio to the phone
line direct you will have a very load hum from the return (ground) path of
the packet audio 73 and good luck

7. Re: [NETSIG:727] Re: DCD mods?

From: rdonnell@eskimo.com (Robert B. Donnell - KD7NM)
Date: Sun, 15 Jan 1995 18:00:38 -0800
To: netsig@tapr.org
Message-ID: <6DT6lWml1a90064yn@eskimo.com>
Rendered body type: text/plain

> *** David Kelly tapped ....:
> > > What is the best mod for (no squelch operation) DCD for a MFJ-1270 or
> > > equivelent. Are there mod circuits available somewhere?
> > > Marvin - WB6PKK
> >
> > TAPR sells one for $15 or $20, PCB and parts, for most TNC's. Works
> > pretty good. Highly recomended.
> >
>
> How does this improve on the existing DCD in the 1270 ? are there
> details of the circuit design available ?
>
> Rob
>
> --
> rob mayfield asc p/l box 73 oaklands park   mayfield@itd.adelaide.edu.au
> vk5xxx@vk5xxx.#adl.#sa.aus.oc   I am the dreamer ...
> http://wattle.itd.adelaide.edu.au/~mayfield   ... you are the dream
>
>

The TAPR 'True DCD' kit is based on an article by Eric Gustafson, N7CL.
The circuit looks at the data stream coming from the modem and detects
data transitions synchronized to the baud rate in use.

When noise is present at the input of the modems used commonly for 300,
1200, and 9600 baud operations the data output is not synchronized to
the baud rate being used, the True DCD circuit detects this condition
and sets its DCD output false.

When modem output is synchronous and at the correct baud rate then the
True DCD circuit sets its DCD output true.

This allows the use of unsquelched audio from the receiver, with the

advantage of removing the delay in detecting presence of another packet transmission that is caused by the radio's squelch circuit. The direct benifit is the reduction in collisions. A side benifit is that all users on the channel may be able to reduce the amount of time wasted at the beginning of each packet sending flags, i.e. the TXDELAY value can be reduced.

Hope this helps.

73, Bob, KD7NM

8. Re: [NETSIG:899] Re: DCD mods?

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Sun, 5 Feb 95 20:03:05 MST
To: netsig@tapr.org
Message-ID: <m0rbJli-0000biC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

The original N7CL DCD modification to the TNC-2 for VHF consisted of only 3 parts, two 180k 1/4 watt resistors and one .01 50v disc capacitor. One resistor replaced R73. The capacitor is paralleled by the remaining 180K resistor and this network is connected between pins 3 and 6 on the underside of U20.

The DCD modification for HF is somewhat more complex.
73 de Jack

9. Re: [NETSIG:899] Re: DCD mods?

From: WCHAST@delphi.com
Date: Sun, 05 Feb 1995 22:47:00 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HMPGP3BFUA93HAAD@delphi.com>
Rendered body type: text/plain

Bob, typed
 (first paragraph removed)

>When noise is present at the input of the modems used commonly for 300,
>1200, and 9600 baud operations the data output is not synchronized to
>the baud rate being used, the True DCD circuit detects this condition
>and sets its DCD output false.

9600B??? I do not know what type of 9k6 operation you are doing but the G3RUH and TAPR modems derive DCD from the presence of good data and the detection of good clock in the data stream. I have rarelly been able to get a 9k6 modem board to false on noise or anthing but actual 9k6 "noise".

The 300 and 1200 observations are generally true. And the DCD board will surelly make the difference when you are using a AFSK modem for those speeds.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---

10. Re: [NETSIG:896] Re: TNC hardwire network????

From: jlarson@micron.net (Jim Larson)
Date: Sun, 5 Feb 95 21:48 MST
To: netsig@tapr.org
Message-ID: <m0rbLNi-000QXUC@mis01.micron.net>
Rendered body type: text/plain

>>Has anyone ever experimented with hooking several TNCs together (radio side)
>>without radios?

>Is the phone line 4 wire?

yes it is.

>there are two choices that I can think of:
>
>Get a Radio Multiplier, which allows upto 4 tnc's to share one radio.
>

>   Use one RM on each end of the phone line on the radio port and
>   hook two (?) tnc's on each end.
>   [NX2P Electronics (201) 729-NX2P]

I'll give them a call.

>Use an RS-232 to RS-485 converter (Needs 2 wire line, but is not audio)
>
>   You would then run the PC's into the RS485 converters into the phone
>   line with NO TNC's. You would need to run something other than KISS.
>   (Can 2 or more PC's talk KISS together?)
>   [Amateur Networking Supply (201) 666-9776]
>

Does RS-485 allow for multiple converters to be hooked up to the same
wire or is it a point to point type circuit between only 2 converters?

Thanks for you input Tom. The internet is a wealth of knowledge in about
any area of interest you may have.

         73, Jim

Jim Larson - KK7A   Internet: jlarson@micron.net
Boise, Idaho
----

11. Re: [NETSIG:897] Re: TNC hardwire network????

From: jlarson@micron.net (Jim Larson)
Date: Sun, 5 Feb 95 21:48 MST
To: netsig@tapr.org
Message-ID: <m0rbLNj-000QXdC@mis01.micron.net>
Rendered body type: text/plain

>jlarson@micron.net (Jim Larson) writes:
>
>>Has anyone ever experimented with hooking several TNCs together (radio side)
>>without radios? I have the need to hook 4 computers together in a TCP/IP
>>environment and have a 2 mile long dedicated phone cable. I was wondering
>>if a person could short the TX and RX audio leads together on each of the
>>4 TNCs and hook this shorted pair to the common phone wire. I can't think
>>why it wouldn't work off the top of my head...but thought I would ask the
>>experts.
>
>It will work. Try to gate everyone's txaudio with PTT by way of an analog
>switch. Don't forget to protect against transients on the phone line!
>

Howie

Thanks for your input. Several people have told me they have done
similar things in the past successfully.

     73, Jim

Jim Larson - KK7A   Internet: jlarson@micron.net
Boise, Idaho
----

12. BPQ 4.08a

From: Richard.Saue@jur.uib.no (Richard Saue)
Date: Mon, 6 Feb 1995 11:05:31 +0000
To: netsig@tapr.org
Message-ID: <v01510100ab5bc1614d13@[129.177.155.182]>
Rendered body type: text/plain

Hi!

G8BPQ has released a new version of his code. Compared to 4.08, 4.08a has a beta
for OS/2. I found the software on FTP://FTP.FUNET.FI

73 de Richard - LA4SGA

13. Re: [NETSIG:902] Re: TNC hardwire network????

From: tmoulton@ram.net
Date: Mon, 06 Feb 95 06:41:53 EST
To: netsig@tapr.org
Message-ID: <06306.15021573@RAMail>

Rendered body type: text/plain

>>>Has anyone ever experimented with hooking several TNCs together (radio sid
>e)
>>>without radios?
>
>>Is the phone line 4 wire?
>
>yes it is.
>
>>there are two choices that I can think of:
>>
>>Get a Radio Multiplier, which allows upto 4 tnc's to share one radio.
>>
>>   Use one RM on each end of the phone line on the radio port and
>>   hook two (?) tnc's on each end.
>>   [NX2P Electronics (201) 729-NX2P]
>
>I'll give them a call.
>
>>Use an RS-232 to RS-485 converter (Needs 2 wire line, but is not audio)
>>
>>   You would then run the PC's into the RS485 converters into the phone
>>   line with NO TNC's. You would need to run something other than KISS.
>>   (Can 2 or more PC's talk KISS together?)
>>   [Amateur Networking Supply (201) 666-9776]
>>
>
>Does RS-485 allow for multiple converters to be hooked up to the same
>wire or is it a point to point type circuit between only 2 converters?

Yes, rs-485 is half duplex multidrop, single twisted pair.
>

tom

14. Re: [NETSIG:896] Re: TNC hardwire network????

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Mon, 6 Feb 1995 11:46:46 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199502061946.LAA28863@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> >
> >Has anyone ever experimented with hooking several TNCs together (radio side)
> >
> >without radios? I have the need to hook 4 computers together in a TCP/IP
> >environment and have a 2 mile long dedicated phone cable. I was wondering
> >if a person could short the TX and RX audio leads together on each of the
> >4 TNCs and hook this shorted pair to the common phone wire. I can't think
> >why it wouldn't work off the top of my head...but thought I would ask the
> >experts.
> >
> >   Tnx and 73
>
> Is the phone line 4 wire?
>
> there are two choices that I can think of:
>
> Get a Radio Multiplier, which allows upto 4 tnc's to share one radio.
>
>   Use one RM on each end of the phone line on the radio port and
>   hook two (?) tnc's on each end.
>   [NX2P Electronics (201) 729-NX2P]
>
> Use an RS-232 to RS-485 converter (Needs 2 wire line, but is not audio)
>
>   You would then run the PC's into the RS485 converters into the phone
>   line with NO TNC's. You would need to run something other than KISS.
>   (Can 2 or more PC's talk KISS together?)
>   [Amateur Networking Supply (201) 666-9776]
>
> Tom, W2VY
>

I'd recommend using a resistive network to connect all the TXA's and
RXA's together - but it works just fine. Our ARC FD station uses this to
run several TNCs from a single radio, sort of. We mix TXA back into the
RXA to provide SCMA locally.

If your dedicated line is 2 wire, you could use a hybrid to multiplex
transmit and receive
on the same line. A hybrid is an old telephone circuit that provides a
truly separate talk and receive path on a single pair by cancelling
locally generated signals (talk) in the receiver, and vice versa. The
only problem with this is that it cannot be amplified, but it's used
extensively in local loops.

A simple way to do this would be to interface each TNC directly with the
handset of a telephone, putting the TXA into the transmitter (tech term
for the microphone), and RXA to the receiver (ditto the ear piece.)
Depending on the phone, you may find a 1:1 transformer on each may work.
If you have a schematic of the phone, you may be able to defeat side tone
(hear yourself on the phone when you talk), which would allow you to run a
single TNC on each end in full duplex mode.

This is a very rudimentary phone patch.

I assume you have talk battery on the line. If not, you'll want to
supply 48 volts @ 600 ohms. Losses over a 2 mile path shouldn't be all
that bad. Check for 5 volts across the telephone in "off hook" position
(pick up the handset.)

 -- mike
wd6ehr@kaiwan.com

15. Re: [NETSIG:847] Topic of the Month: Network Measurement Tools

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Mon, 6 Feb 95 22:45 WET
To: netsig@tapr.org
Message-ID: <m0rbgra-000CDHC@balrog.k8lt.ampr.org>
Rendered body type: text/plain

I have a program that generates reports on TCP/IP network traffic by
analyzing NOS trace files. Since all my packet activity is on a datagram
mode, TCP/IP-only network, that's what this tool was tailored to analyze.

The program looks at the trace, and tries to identify all of the
TCP connections that were captured. It generates statistics on each
connection in the form:

source -> destination <state> (nn/mm frames) xx/yy bytes (percent)...
    <state> - final state of connection
    nn - frames that were part of this connection
    mm - total frames on channel during the connection
    xx - retransmitted TCP data bytes
    yy - total TCP bytes
    percent - percent thruput in that direction
---
balrog.k8lt.ampr.org:1052 -> switch.centma.ampr.org:20 completed (202/228 frames) 0/0 bytes (0%) ->
1728/20972 bytes (92%)
switch.bedford.ampr.org:1039 -> switch.sema.ampr.org:smtp reset (3/8 frames) 0/0 bytes (0%) -> 0/0
bytes (0%)
balrog.k8lt.ampr.org:1055 -> wa1equ.ampr.org:smtp completed (33/50 frames) 237/1229 bytes (81%) ->
8/154 bytes (95%)
balrog.k8lt.ampr.org:1056 -> wa1equ.ampr.org:smtp completed (30/39 frames) 432/1208 bytes (64%) ->
0/146 bytes (100%)
ka1mf.ampr.org:1034 -> aa1jf.ampr.org:telnet reset (9/120 frames) 0/0 bytes (0%) -> 0/0 bytes (0%)

It also generates stats on ARP requests and on total frames and bytes
on the channel.

The program really needs some work to generate more meaninful reports, but
maybe it will be a starting point for somebody else. Let me know if
you want a copy.

It runs on FreeBSD, and should probably compile as-is on Linux.

73,
        /gary

Gary L. Grebus   Home: glg@k8lt.ampr.org (decvax!balrog!glg)
Brookline, NH   Work: grebus@mak01.enet.dec.com
                        Ham Packet: K8LT@WA1PHY.#EMA.MA.USA

16. Re: [NETSIG:907] Re: Topic of the Month: Network Measurement Tools

From: jra@ag9v.ampr.org
Date: Tue, 7 Feb 1995 19:01:55 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199502080001.TAA27714@ag9v>
Rendered body type: text/plain

Hi Gary --

Please send me a copy if you can (shar'ed, uuencoded, or whatever) and I'll
put it in the netsig area at tapr.org.

73,
John

You (Gary L. Grebus) write:
>
>
>I have a program that generates reports on TCP/IP network traffic by
>analyzing NOS trace files. Since all my packet activity is on a datagram
>mode, TCP/IP-only network, that's what this tool was tailored to analyze.
>
>The program looks at the trace, and tries to identify all of the
>TCP connections that were captured. It generates statistics on each
>connection in the form:
>
>source -> destination <state> (nn/mm frames) xx/yy bytes (percent)...
>   <state> - final state of connection
>   nn - frames that were part of this connection
>   mm - total frames on channel during the connection
>   xx - retransmitted TCP data bytes
>   yy - total TCP bytes
>   percent - percent thruput in that direction
>---
>balrog.k8lt.ampr.org:1052 -> switch.centma.ampr.org:20 completed (202/228 frames) 0/0 bytes (0%) ->
1728/20972 bytes (92%)
>switch.bedford.ampr.org:1039 -> switch.sema.ampr.org:smtp reset (3/8 frames) 0/0 bytes (0%) -> 0/0
bytes (0%)
>balrog.k8lt.ampr.org:1055 -> wa1equ.ampr.org:smtp completed (33/50 frames) 237/1229 bytes (81%) ->
8/154 bytes (95%)
>balrog.k8lt.ampr.org:1056 -> wa1equ.ampr.org:smtp completed (30/39 frames) 432/1208 bytes (64%) ->
0/146 bytes (100%)
>ka1mf.ampr.org:1034 -> aa1jf.ampr.org:telnet reset (9/120 frames) 0/0 bytes (0%) -> 0/0 bytes (0%)
>
>It also generates stats on ARP requests and on total frames and bytes
>on the channel.
>
>The program really needs some work to generate more meaninful reports, but
>maybe it will be a starting point for somebody else. Let me know if
>you want a copy.
>
>It runs on FreeBSD, and should probably compile as-is on Linux.
>
>73,
>   /gary
>
>Gary L. Grebus   Home: glg@k8lt.ampr.org (decvax!balrog!glg)
>Brookline, NH   Work: grebus@mak01.enet.dec.com
>   Ham Packet: K8LT@WA1PHY.#EMA.MA.USA
>

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

17. Re: [NETSIG:904] BPQ 4.08a

From: k0hyd@southwind.net (Dale L. Puckett)
Date: Tue, 7 Feb 1995 22:43:23 -0500
To: netsig@tapr.org
Message-ID: <v01510100ab5deda212c6@[44.122.0.4]>
Rendered body type: text/plain

>Hi!
>
>G8BPQ has released a new version of his code. Compared to 4.08, 4.08a has
>a beta
>for OS/2. I found the software on FTP://FTP.FUNET.FI

>
>73 de Richard - LA4SGA

Has anyone found it anywhere else. I've been trying to ftp it from this
site for the last two evenings. No luck.

If I do get it, I'll post it here at

ftp://ftp.southwind.net/users/k/k0hyd

73 de Dale
INTERNET: k0hyd@southwind.net
AMPR: k0hyd@k0hyd.#scks.ks.usa.noam
Dale L. Puckett, 23440 West Highway 54,
Goddard, KS 67052 (316-794-2347)

18. RE: [NETSIG:909] Re: BPQ 4.08a

From: Murphree Michael A <mamurphree@space.honeywell.com>
Date: Wed, 08 Feb 95 11:38:00 PST
To: netsig <netsig@tapr.org>
Message-ID: <2F3929DB@smtpdos.space.honeywell.com>
Rendered body type: text/plain

Yes, it is currently on ftp.demon.co.uk in the /pub/ham area, file is
bpq408a.zip

Mike N4CNW

>From: netsig
>To: netsig
>Subject: [NETSIG:909] Re: BPQ 4.08a
>Date: Wednesday, February 08, 1995 11:03AM
>
>>Hi!
>>
>>G8BPQ has released a new version of his code. Compared to 4.08, 4.08a has
>>a beta
>>for OS/2. I found the software on FTP://FTP.FUNET.FI
>>
>>73 de Richard - LA4SGA
>
>Has anyone found it anywhere else. I've been trying to ftp it from this
>site for the last two evenings. No luck.
>
>If I do get it, I'll post it here at
>
>ftp://ftp.southwind.net/users/k/k0hyd
>
>73 de Dale
>INTERNET: k0hyd@southwind.net
>AMPR: k0hyd@k0hyd.#scks.ks.usa.noam
>Dale L. Puckett, 23440 West Highway 54,
>Goddard, KS 67052 (316-794-2347)
>
>
>

19. PacComm AD4 experience?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Wed, 8 Feb 1995 13:50:18 -0800
To: netsig@tapr.org
Message-ID: <ab5eec40070210049796@[129.46.12.181]>
Rendered body type: text/plain

Does anyone out there have experience with the PacComm AD4 analog to
digital converter and deviation meter? I would like input, good or bad.

I am not planning to use the S-meter model. I thought the extra port
access would be handy, compared to the MFJ-50 something with only deviation
monitoring available.

Marvin J. Munster
mmunster@qualcomm.com
WB6PKK @ KJ6VC.#SOCA.CA.US.NA
****
"As the fading light of a dying day filtered through the window blinds,
Roger stood over his victim with a smoking .45, surprised at the sernity
that filled him after pumping six slugs into the bloodless tyrant that had

mocked him day after day, and then he shuffled out of the office with one
last look back at the shattered computer terminal lying there like a
silicon armadillo left to rot on the information highway."
****

20. Netrom function, source of answer...

From: "Walter Reid Fletcher" <fletcher@moho.uwyo.edu>
Date: 8 Feb 95 14:54:00 MST
To: "netsig" <netsig@tapr.org>
Message-ID: <m0rcKNQ-0000bZC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

Hi,

     A question has come up and I have been looked for a source for
the answer.

     Consider the following netrom network topology:

      +---+   +---+   +---+   +---+
      | A |<----->| B |<----->| C |<----->| D |
      +---+   +---+   +---+   +---+

     All nodes know about each other in their tables. Each link is
on a different frequency, hence there is no direct path, for instance
between node A and node C. One must go from A to B then C.

     Here are the two scenarios in question:

     1) A PBBS station initiates a connect to a PBBS at the distant end
         by connecting first to node a, then to node b, then c, then d,
         then the destination PBBS.

     2) A PBBS station initiates a connect to a PBBS at the distant end
         by connecting first to node a, then issuing a connect to d,
         then the destination PBBS.

     The contention is that making the connection via method 2 is actually
faster (more efficient) than method 1. The justification is that method 2
operates such that node D ACKs packets back to node A, whereas method 1
requires D to ACK to C, C to B, and B to A.

     Where would I be able to find information that would reveal which is
in fact correct?

Reid,
WB7CJO

21. Re: [NETSIG:913] NETSIG digest 122

From: Dirk-Jan Koopman <djk@dirku.demon.co.uk>
Date: Thu, 9 Feb 1995 10:04:18 +0100 (GMT)
To: netsig@tapr.org
Message-ID: <m0rcVjW-0001ZGC@dirku>
Rendered body type: text/plain

>
> Date: 8 Feb 95 14:54:00 MST
> From: "Walter Reid Fletcher" <fletcher@moho.uwyo.edu>
>
>   Hi,
>
>   A question has come up and I have been looked for a source for
> the answer.
>
>   Consider the following netrom network topology:
>
>   +---+   +---+   +---+   +---+
> | A |<----->| B |<----->| C |<----->| D |
>   +---+   +---+   +---+   +---+
>
>   All nodes know about each other in their tables. Each link is
> on a different frequency, hence there is no direct path, for instance
> between node A and node C. One must go from A to B then C.
>
>   Here are the two scenarios in question:
>
>   1) A PBBS station initiates a connect to a PBBS at the distant end
>   by connecting first to node a, then to node b, then c, then d,
>   then the destination PBBS.

>
>   2) A PBBS station initiates a connect to a PBBS at the distant end
>   by connecting first to node a, then issuing a connect to d,
>   then the destination PBBS.
>
>   The contention is that making the connection via method 2 is actually
> faster (more efficient) than method 1. The justification is that method 2
> operates such that node D ACKs packets back to node A, whereas method 1
> requires D to ACK to C, C to B, and B to A.
>

There is no intrinsic difference between the two methods other than it
requires human/automaton action to issue the the intermediate connect
commands. In both cases a level 4 connect is done between each
intervening node so, protocol wise, there is no difference between the
method.

There is a 'visual' aspect, however, if you use method 2 and you are
using bpq software at the nodes (other flavours of net/rom may vary) and
you get a 'users' list at node b or c, your connection will not be
visible. It is possible to infer the circuit's presence by looking at
other things, but as far as the normal status listings are concerned -
you aren't there, your circuit passes thru more or less invisibly. You
will only appear in the 'users' list at node a and d.

It is possible, with method 1, to issue level 2 connects between nodes
(just like the connections from you to the first node). This can be
useful sometimes for certain links and can result in a slightly higher
thruput PROVIDED only one or two circuits are using this method. The
reason it is slightly (and I mean _slightly_) quicker is that you don't
have the level 3 & 4 overhead on each info packet (plus the level3 & 4
acks). In practice it doesn't make that much difference when you are
using a busy link and can slow things down if used in the wrong
circumstances. The way you do it is use the net/rom alias with an ssid.

My node is G1TLH:TLH and one of my neighbours is G4VLS:VLS; to do a level
2 connect between me and my neighbour would require a:-

C 1 VLS-1

as opposed to the normal

C VLS or C G4VLS

Each separate circuit to VLS (in this case) would require a different
ssid (from the same calling station).

>   Where would I be able to find information that would reveal which is
> in fact correct?

I dunno, I get mine from the horse's mouth, John G8BPQ.

--
Dirk-Jan Koopman   Tel/Fax: +44 1362 696076 Mobile: +44 973 333806
Computer Consultant   Email: djk@dirku.demon.co.uk or G1TLH@GB7TLH.#35.GBR.EU
"We are actually strong believers in the therapeutic qualities of
oddity. It provides a little bit of sanity in the world" - The Bookseller

22. PacComm AD4 experience?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Thu, 9 Feb 1995 13:05:21 -0800
To: netsig@tapr.org
Message-ID: <ab6033e4160210049181@[129.46.12.181]>
Rendered body type: text/plain

(This didn't seem to go anywhere the first time, so I'll try again.)

Does anyone out there have experience with the PacComm AD4 analog to
digital converter and deviation meter? I would like input, good or bad.

I am not planning to use the S-meter model. I thought the extra port
access would be handy, compared to the MFJ-50 something with only deviation
monitoring available.

Marvin J. Munster
mmunster@qualcomm.com
WB6PKK @ KJ6VC.#SOCA.CA.US.NA
****

"As the fading light of a dying day filtered through the window blinds,
Roger stood over his victim with a smoking .45, surprised at the sernity
that filled him after pumping six slugs into the bloodless tyrant that had
mocked him day after day, and then he shuffled out of the office with one
last look back at the shattered computer terminal lying there like a
silicon armadillo left to rot on the information highway."
****

23. bpq408a.zip

From: k0hyd@southwind.net (Dale L. Puckett)
Date: Thu, 9 Feb 1995 23:17:03 -0500
To: NETSIG@tapr.org
Message-ID: <v01510100ab607873c276@[44.122.0.4]>
Rendered body type: text/plain

For anyone running OS/2 with BPQ, I have posted

bpq408a.zip

at ftp://ftp.southwind.net/users/k/k0hyd

Enjoy!

Dale

73 de Dale
INTERNET: k0hyd@southwind.net
AMPR: k0hyd@k0hyd.#scks.ks.usa.noam
Dale L. Puckett, 23440 West Highway 54,
Goddard, KS 67052 (316-794-2347)

24. RE: [NETSIG:915] PacComm AD4 experience?

From: roberts@ses6a.bt.co.uk
Date: Fri, 10 Feb 1995 19:09:16 +0000
To: netsig@tapr.org
Message-ID: <m0rd0ie-0000bKC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

if you are not planning to use the S meter, the next
version of TheNet X1J (to be released in a few weeks)
will have the capability of using the S meter and / or
dev meter channels as general purpose channels
so you can have 2,3 or 4 generaal purpose channels.

Dave
G8KBB

25. Re: [NETSIG:917] RE: PacComm AD4 experience?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 10 Feb 1995 13:16:51 -0800
To: netsig@tapr.org
Message-ID: <ab6184c323021004b6c8@[129.46.12.181]>
Rendered body type: text/plain

Wow Dave! First time I heard of a new release (X1K/1 or X1J/3). I won't
send this any further. I'll let you break the news. Can you give me a
little hint of what is going to be new?

I ordered a couple of the MFJ-52's and found that it was only the Dev.
section of the circuit. So I sold it and opted for the PacComm AD4, but
han't ordered that yet. I am not going to order the S meter this time
because the radio I have in it is not that accessable to the IF. Or, maybe
I will..... Hmmmm. any opinion here? Again, thanks for all your hard work
on the X1J, and tell me all about what new.

Marvin - WB6PKK
ESCN:WB6PKK-8, Escondido,   San Diego County, CA - 145.07
SNDG:WB6PKK-7, Palomar Mountain, San Diego County, CA - 145.07
PALMAR:W6NWG-7, Palomar Mountain, San Diego County, CA - 145.05

>if you are not planning to use the S meter, the next
>version of TheNet X1J (to be released in a few weeks)
>will have the capability of using the S meter and / or
>dev meter channels as general purpose channels
>so you can have 2,3 or 4 generaal purpose channels.
>
>Dave

>G8KBB

26. Need 9600 Baud Mod Information

From: zephd@iquest.net (David Zeph)
Date: Fri, 10 Feb 95 17:39 EST
To: netsig@tapr.org
Message-ID: <m0rd3zX-000EA4C@dorite.use.com>
Rendered body type: text/plain

We're using a 19.2Kb backbone to link PacketClusters in Central Indiana with
those in Ohio. However, the links from the Clusters to the backbone still
run at 1200 baud.

I'd like to start modifying pairs of radios to link the Clusters to the
backbone at 9600 baud. Fortunately the radios in each pair are the same,
but of course each pair is a different brand!

The one I'd like to try upgrading first uses a pair of Yaesu FT311RM
transceivers. Does anyone on the Reflector have data on modifying these
radios for 9600 baud operation?

Thanks and 73 ---> Dave, W9ZRX   (zephd@iquest.net)

27. combiner/duplexor

From: r.ishmael@genie.geis.com
Date: Sat, 11 Feb 95 04:27:00 UTC
To: netsig@tapr.org
Message-ID: <199502110456.AA031358582@relay1.geis.com>
Rendered body type: text/plain

This may not be the correct area to post this but it is worth a start. We are
in need of information on combiners (especially UHF). We have a good Packet
node site and are trying to set it up as a point to point server (multiple UHF
links out to single recieving nodes). Our problem is limited antenna space
allowed to us (free site with 2 antennas). at this site we already have a set
of UHF packet nodes on one UHF antenna via a duplexor but we need now to
combine a simplex packet system on the UHF repeater antenna (essentially it
will look like 3 UHF simplex on one antenna). From the ARRL handbook there is
limited information on commercial combiners to allow multiple repeaters on
single antennas. Does anyone have more specific information on these marvels.
Can they be built from multiple duplexors? If so has anyone done this and is
there written info on how it is done and what to watch out for in making them
work. Like most hams we have access to parts and equipment but very little
money for high cost items. Your help is much appreciated. Answers can be
returned to :

rishmael@halnet.com
r.ishmael@genie.geis.com
WD0AJG@WD0AJG.OK.USA.NOAM
or via the callbook address and the US-Snail.

28. Re: [NETSIG:920] combiner/duplexor

From: jra@ag9v.ampr.org
Date: Sat, 11 Feb 1995 08:17:29 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199502111317.IAA05872@ag9v>
Rendered body type: text/plain

You (r.ishmael@genie.geis.com) write:
>
>This may not be the correct area to post this but it is worth a start. We are
>in need of information on combiners (especially UHF). We have a good Packet
>node site and are trying to set it up as a point to point server (multiple UHF
>links out to single recieving nodes). Our problem is limited antenna space
>allowed to us (free site with 2 antennas). at this site we already have a set
>of UHF packet nodes on one UHF antenna via a duplexor but we need now to
>combine a simplex packet system on the UHF repeater antenna (essentially it
>will look like 3 UHF simplex on one antenna). From the ARRL handbook there is
>limited information on commercial combiners to allow multiple repeaters on
>single antennas. Does anyone have more specific information on these marvels.
>Can they be built from multiple duplexors? If so has anyone done this and is
>there written info on how it is done and what to watch out for in making them
>work. Like most hams we have access to parts and equipment but very little
>money for high cost items. Your help is much appreciated. Answers can be

We've been looking into this as well, as we attempt to grow a site that al-
ready has three voice repeaters and three packet systems. Here's what we've
figured out so far (and corrections will be <gladly> accepted!!!):

1. It's probably simplest to use separate RX and TX antennas. It's no big deal to combine several receivers onto one antenna, with a combination of a good preamp and hybrid splitters. Then you only (?) need to worry about the transmitters. Trying to run multiple TX and multiple RX into a single antenna can get awfully hairy.

2. You can use either high-Q filters (ie, cavities) or a hybrid combiner to combine multiple TXs. The cavities cost more and have a minimum spacing requirement between frequencies, but have less loss. The combiner has no frequency restrictions (you can combine two TXs on the same freq if you want) but dumps half your power into a dummy load, so isn't nearly as efficient. It ain't cheap to buy, either.

3. Regardless of whether you use cavities or a combiner, you're probably going to need to put an isolator on each transmitter. This is a device that allows forward power to get to the antenna, but shunts anything that's coming back down the line into a dummy load. It's necessary to keep power from the other transmitters from getting into the TX final, where it can generate IMD products. Note that by its nature you <can't> put a transceiver on an isolator -- nothing will get back down the line to the receiver!

4. All these bits are available commercially for big bucks, but many of them can be faked by the resourceful. One thing we're looking at now for UHF isolators is pretty sneaky: the old Motorola Micor UHF radio has an isolator built in to the T/R switch (the finals were so sensitive to SWR the isolator was needed to keep 'em from blowing up). A fairly simple mod can turn the switch into a permanent UHF isolator. I've got a half dozen switches in a box waiting to be operated on as part of our antenna combining scheme. Unfortunately, the VHF Micor had a (slightly) more rugged final and doesn't have the isolator.

5. Try to get hold of a Celwave or DB Products catalog. They have whole sections on combiners, with a fair bit of technical detail.

Hope this is helpful, and not too inaccurate :-).

73,
John AG9V

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

29. (no subject)

From: "Hovland,D Amn 27CS/SCSD" <HOVLANDD@cs27.cannon.af.mil>
Date: Mon, 13 Feb 95 08:49:00 mst
To: Networking SIG <netsig@tapr.org>
Message-ID: <2F3F1D89@cs27.cannon.af.mil>
Rendered body type: text/plain

subscribe

30. [NETSIG:921] Re: combiner/duplexor

From: <Dave@kwa.mhs.compuserve.com>
Date: 13 Feb 95 14:10:18 EST
To: <netsig@tapr.org>
Message-ID: <950213191018_555063.0_EHF71-1@CompuServe.COM>
Rendered body type: text/plain

On Fri, 10 Feb 1995 23:08, r.ishmael@genie.geis.com wrote:

>This may not be the correct area to post this but it is worth a start. We
>are in need of information on combiners (especially UHF). We have a good
>Packet node site and are trying to set it up as a point to point server
>(multiple UHF links out to single recieving nodes). Our problem is limited
>antenna space allowed to us (free site with 2 antennas). at this site we
>already have a set of UHF packet nodes on one UHF antenna via a duplexor
>but we need now to combine a simplex packet system on the UHF repeater
>antenna (essentially it will look like 3 UHF simplex on one antenna).
[some deleted]

My experience is with hybrid combiners used with and without a duplexer.
John AG9V has covered much of the material in his response. I will add
comments from my experience.

The Squaw Mountain site in the Denver area has a pair of 4-bay dipole
antennas spaced 30-feet vertically for use by 4 2-meter repeaters. The

receivers are fed by a splitter directly from the higher of the antennas. No preamp is used here because of the high level of rf present on the antenna. Each repeater receiver uses one or more cavities to provide isolation from the repeater transmitters. The 4 transmitters feed a Celwave 4-port hybrid combiner attached to the lower of the antennas. Each port of the combiner has 7-dB of loss to the antenna in the forward direction. The repeaters are spread thru the 2-meter band and do coexist even with some relatively close spacing (350kHz rx-to-tx).

At our Conifer Mountain site we recently added a Wacom transmit hybrid combiner and receiver multicoupler to allow our new 447.200 9600 Baud Digital Repeater to share the antenna and feedline with our existing 447.150 voice repeater. Because of the close frequency spacing, we were able to install the transmit combiner to the transmit port of the duplexer allowing both repeater transmitters to share the duplexer. Both repeater receivers are attached to the duplexer receiver port thru a preamp and splitter.

In both cases, there is sufficient spacing between transmitters and receivers to allow all this to work. Commercial equipment (Motorola and GE) can generally tolerate the high rf levels that can be present in these systems though cavities are good insurance. Ham gear just doesn't have the tolerance without some number of cavities ahead of it. The hybrid combiners that we used included isolators and second harmonic filters that help to minimize intermod.

If you are going to try one of these, I strongly suggest that you use a spectrum analyzer to verify that no intermod products are being generated as a result of the design that you have come up with. On each of the installations installed above, there was an intermod problem that had to be resolved.

I agree with John that you should acquire catalogs from Celwave, Decibel Products, Wacom, and other manufacturers. You might ask them specifically for booklets or application notes on combining. They are a very good source of ideas and data.

73,

  Dave, WA1JHK

Dave Maciorowski, WA1JHK
Colorado Repeater Association, Inc.
  Serving the Colorado Front Range
    NEW! 447.200 9600 Baud Digital Repeater!

Internet: dave@kwa.mhs.compuserve.com
CompuServe: MHS:Dave@KWA

31. Re: [NETSIG:913] Netrom function, source of answer...

From: "Gary McDuffie, Sr." <mcduffie@hannibal.wncc.cc.ne.us>
Date: Tue, 14 Feb 1995 11:28:55 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9502141156.A6464-0100000@hannibal>
Rendered body type: text/plain

Quite some time has passed with no other input on the subject of Reid's posting. I was hoping to get some other comments on this. Where are all the techies hiding? I know what I see on the screen, but I don't think Reid believes me :) I'd like some help in convincing him.

Gary

P.S. Reid, have you had any non-public responses on this? I haven't.

32. Re: [NETSIG:924] Re: Netrom function, source of answer...

From: tmoulton@ram.net
Date: Tue, 14 Feb 95 16:59:30 EST
To: netsig@tapr.org
Message-ID: <15021573.18cd@ram.net>
Rendered body type: text/plain

>Quite some time has passed with no other input on the subject of Reid's
>posting. I was hoping to get some other comments on this. Where are all
>the techies hiding? I know what I see on the screen, but I don't think
>Reid believes me :) I'd like some help in convincing him.
>
>Gary
>

>P.S. Reid, have you had any non-public responses on this? I haven't.
>

The only response I saw was from G1TLH who spoke to G8BPQ.

If you use Node names between them than 1 and 2 are the same, if you use
level 2 callsigns then 2 might be a little slower, due to additional Level 4
overhead.

Here is one area where ROSE out performs NetRom, since ROSE does not
implement a level 4, it just streams data as fast as it can.

A fact is that for data sizes of 1024 bytes or larger (up to 4096 was tested)
ROSE will pass data twice as fast as X1J.

smoothed round trip times follow:

size	rose	x1j
64	2.0	2.1 Seconds
80	2.2	2.7
128	2.7	3.1
256	4.8	4.8
512	5.4	6.8
1024	8.9	19.0
2048	14.8	31.0
4096	25.9	56.1

paclen=236 to give netrom room for overhead.

What is the typical pbbs message size?

I can send the complete test results if people are interested.

tom

33. Re: [NETSIG:925] Re: Netrom function, source of answer...

From: "Gary McDuffie, Sr." <mcduffie@hannibal.wncc.cc.ne.us>
Date: Tue, 14 Feb 1995 21:33:04 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9502142124.A24328-0100000@hannibal>
Rendered body type: text/plain

> The only response I saw was from G1TLH who spoke to G8BPQ.

In his response, I believe he might have assumed the same thing as your
paragraph below.

> If you use Node names between them than 1 and 2 are the same, if you use
> level 2 callsigns then 2 might be a little slower, due to additional Level 4
> overhead.

The real question in very brief form is...

With 4 nodes (a, b, c, d) is it more efficient to connect from node a and
tell it to connect to node d, letting the network do its thing? Or is it
more efficient to connect to node a, tell it to connect to b, etc, until
you get to d? Read my long explanation to know my beliefs. There is
more network overhead when going one hop at a time than there is going
end to end. This doesn't always mean it is faster.

> Here is one area where ROSE out performs NetRom, since ROSE does not
> implement a level 4, it just streams data as fast as it can.

I don't know the ins and outs of rose protocol, but I've had it running
and I liked it. The overhead is smaller and it seems to work, in my
limited experience. I haven't played with it for many years since it
would do little good sitting in the middle of a netrom network. You make
do with what will work in your area.

Gary

34. Re: [NETSIG:926] Re: Netrom function, source of answer...

From: tmoulton@ram.net
Date: Wed, 15 Feb 95 07:28:20 EST
To: netsig@tapr.org
Message-ID: <15021573.18d2@ram.net>
Rendered body type: text/plain

>> The only response I saw was from G1TLH who spoke to G8BPQ.
>
>In his response, I believe he might have assumed the same thing as your
>paragraph below.
>
>> If you use Node names between them than 1 and 2 are the same, if you use
>> level 2 callsigns then 2 might be a little slower, due to additional Level
> 4
>> overhead.
>
>The real question in very brief form is...
>
>With 4 nodes (a, b, c, d) is it more efficient to connect from node a and
>tell it to connect to node d, letting the network do its thing? Or is it
>more efficient to connect to node a, tell it to connect to b, etc, until
>you get to d? Read my long explanation to know my beliefs. There is
>more network overhead when going one hop at a time than there is going
>end to end. This doesn't always mean it is faster.
>

I think his answer said that if you are using the node names, hop by hop it
is the same as node names end to end because the node establishes a Level 4
session hop by hop anyway.

and if you use the level 2 callsigns it will be a LITTLE slower.

>> Here is one area where ROSE out performs NetRom, since ROSE does not
>> implement a level 4, it just streams data as fast as it can.
>
>I don't know the ins and outs of rose protocol, but I've had it running
>and I liked it. The overhead is smaller and it seems to work, in my
>limited experience. I haven't played with it for many years since it
>would do little good sitting in the middle of a netrom network. You make
>do with what will work in your area.
>
ROSE is just the full X.25 implementation.

In the strict view of networking Level 4 (and above) only belongs in the end
user's equipment. The network should only have up to Level 3.

35. Re: [NETSIG:925] Re: Netrom function, source of answer...

From: Klarsen <k5di@kazak.NMSU.Edu>
Date: Wed, 15 Feb 1995 10:46:53 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950215103721.3317B@kazak>
Rendered body type: text/plain

On Tue, 14 Feb 1995 tmoulton@ram.net wrote:

> >Quite some time has passed with no other input on the subject of Reid's
> >posting. I was hoping to get some other comments on this. Where are all
> >the techies hiding? I know what I see on the screen, but I don't think
> >Reid believes me :) I'd like some help in convincing him.
> >
> >Gary
> >
> >P.S. Reid, have you had any non-public responses on this? I haven't.
> >
>
> The only response I saw was from G1TLH who spoke to G8BPQ.
>
> If you use Node names between them than 1 and 2 are the same, if you use
> level 2 callsigns then 2 might be a little slower, due to additional Level 4
> overhead.
>
> Here is one area where ROSE out performs NetRom, since ROSE does not
> implement a level 4, it just streams data as fast as it can.
>
> A fact is that for data sizes of 1024 bytes or larger (up to 4096 was tested)
> ROSE will pass data twice as fast as X1J.
>
> smoothed round trip times follow:
>
> size   rose   x1j
> 64   2.0   2.1 Seconds
> 80   2.2   2.7
> 128   2.7   3.1
> 256   4.8   4.8
> 512   5.4   6.8

> 1024   8.9   19.0
> 2048   14.8   31.0
> 4096   25.9   56.1
>
> paclen=236 to give netrom room for overhead.
>
> What is the typical pbbs message size?
>
> I can send the complete test results if people are interested.
>
> tom
>

Tom I ran a similar test to see how much faster the TCP on ax.25 part of x1j ran data than the netrom part of the same node. I used the smaller packet size 230 for netrom due to fragmintation problems. We used ftp to get the same file of about 80,000 bytes. This was over a single simplex x1j node.

Due I think to the 512 byte tcp packet against the 230 byte netrom packet, even when allowing multiple packets, tcp was about twice as fast as netrom for the ftp process.

Tom I am a lover of NOS so the x1j node is *VERY* nice...:-)

-karl k5di

36. Re: [NETSIG:928] Re: Netrom function, source of answer...

From: tmoulton@ram.net
Date: Wed, 15 Feb 95 14:43:31 EST
To: netsig@tapr.org
Message-ID: <15021573.18d4@ram.net>
Rendered body type: text/plain

>   Tom I am a lover of NOS so the x1j node is *VERY* nice...:-)
>
>-karl k5di
>

It will be interesting to see what you think of ROSE when it can handle UI frames...

I'll let you know when it is ready....

tom

37. Re: [NETSIG:926] Re: Netrom function, source of answer...

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Wed, 15 Feb 95 14:07:56 MST
To: netsig@tapr.org
Message-ID: <m0rerSc-0000x1C@dptspd.sat.datapoint.com>
Rendered body type: text/plain

Regarding the "efficiency" (whatever that means) of routing node by node, or from entry node to destination node, my understanding of the TheNet implimentation of netrom is that the net result is the same. There are link layer acks between each neighbor node in either case.

The only reference I know of for netrom operation is the Software 2000 netrom manual. Takes a little bit of digging, but everything is there.

W2VY showed some interesting data comparing data thruput between ROSE and X-1J. I'd be interested to see more of the test parameters. Were these numbers theoretical or over a radio link? If over a radio link, was the test traffic the only traffic on the link at the time? Since TCP/IP is also a protocol contender, it would be interesting to see a comparison with the longer framelengths going through X-1J routers.

While we are talking about longer framelength or paclen, there are trade-offs involved here. As the UI frame is increased in length the ratio between information and overhead becomes more favorable. In otherwords, the "efficency" improves since it requires less overhead to get a greater amount of information delivered to a destination station. But as the framelength increased, so is the chance of a collision on an unprotected radio link. The longer the frame, the more time it takes in transit, the greater the chance of it being hit with interference, and then requiring a retry. Regardless of the protocol, paclen is a trade-off depending upon circuit conditions.

73 de Jack

38. JNOS problem with COM2 port

From: dino@cam.org (Dino Moriello)
Date: Wed, 15 Feb 1995 16:16:22 -0500
To: netsig@tapr.org
Message-ID: <199502152116.AA19192@rouyn-ogc.hydro.qc.ca>
Rendered body type: text/plain

I recently installed JNOS 1.10g into my 286 PC. I am using 2 com ports.
COM1 is connected to my TNC2 in KISS mode and COM2 is connected to my NETROM
diode matrix. THis is my problem.

The COM1 KISS port works flawlessly but the COM2 port which I configured
like this: attach asy 2f8 3 nrs nr 2048 236 9600   will hang up regularly.

When it hangs up the asy command will show (CTS FLOW CONTROL) in the com2
port info lines. And this is even when nothing but rs232 lines 2,3 and 7
are used.
I've disconnected the CTS and DTR, (pin 5 and 20) and the port still hangs.
It seems to occur at random. Sometimes it will go for hours without a
problem. One thing I have noticed is that when it does hang, the ASY
command will show for example: TX: 234 int, 231 chr, etc.....

If I detach the port and re attach it, it will sometimes come back ok.
The only thing that fixes it is a cold boot of the machine.

I tried to add the N option for NETROM in the attach command, but then
nothing works on that port.

I Also noticed that the pin 20 on this port is always in the wrong state and
locks up the matrix from talking. I have 2 serial cards, each with 2 ports,
and I tried every combination of com1 and com2 and always the same.

Does any one know how I can solve this? Is the version of NOS not tested
for netrom or is there a better version? ANy advice is welcome because I'd
like to run a small Mailbox system for the club here on the netrom ports and
run my own fun tcpip stuff on the radio port.

TIA, Dino

dino@ve2dm.ampr.org   or dino@cam.org
+----------------------------------+--------------------------------------+
Dino Moriello (Telecom Tech)	WARNING: The Surgeon General has
moriello@rouyn-ogc.hydro.qc.ca	determined that the Internet
Packet: VE2DM@VE2FKB	can be hazardous to your health.
+----------------------------------+   Avoid prolonged exposure.
Please E-mail all USENET replies.	--------------------------------------+
+----------------------------------+   James Bay, Quebec, CANADA

39. Re: [NETSIG:931] JNOS problem with COM2 port

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Wed, 15 Feb 95 16:56:33 CST
To: netsig%tapr.org@allanon.ia.net
Message-ID: <15967@k0vm.ampr.org>
Rendered body type: text/plain

In message <199502152116.AA19192@rouyn-ogc.hydro.qc.ca> netsig@tapr.org writes:
>
> The COM1 KISS port works flawlessly but the COM2 port which I configured
> like this: attach asy 2f8 3 nrs nr 2048 236 9600   will hang up regularly.
>
Dino,

This is the attach that i have used with several different verions
of jnos (curretnly 110h)

attach asy 0x2e8 5 nrs local 2048 256 19200 k0vm-7

I beleive that i do have the CTS/DTR line tied up however...

-73- AL -----------+--------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

40. Re: [NETSIG:930] Re: Netrom function, source of answer...

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 15 Feb 95 15:29:19 PST

To: netsig@tapr.org
Message-ID: <9502151529.ZM5302@hanko>
Rendered body type: text/plain

On Feb 15, 3:58pm, Jack Taylor wrote:
> Subject: [NETSIG:930] Re: Netrom function, source of answer...
> Regarding the "efficiency" (whatever that means) of routing node by node,
> or from entry node to destination node, my understanding of the TheNet
> implimentation of netrom is that the net result is the same. There are
> link layer acks between each neighbor node in either case.

Ummm ... couldn't some just do some experiments and find out?

> The only reference I know of for netrom operation is the Software 2000
> netrom manual. Takes a little bit of digging, but everything is there.

<stuff not related to question at hand removed>

I've done those experiments under a small selection of conditions,
and the results are intresting: it is much faster (by a factor of
two to ten) to route "end to end" instead of "step by step".

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

41. Re: [NETSIG:927] Re: Netrom function, source of answer...

From: "Gary McDuffie, Sr." <mcduffie@hannibal.wncc.cc.ne.us>
Date: Wed, 15 Feb 1995 21:24:32 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9502152122.A2215-0100000@hannibal>
Rendered body type: text/plain

On Wed, 15 Feb 1995 tmoulton@ram.net wrote:

> I think his answer said that if you are using the node names, hop by hop it
> is the same as node names end to end because the node establishes a Level 4
> session hop by hop anyway.

But, if you monitor the whole path, you will see that this isn't true.

> and if you use the level 2 callsigns it will be a LITTLE slower.

What is a level two callsign? The only way you can make a level two
connect on a node (to another KNOWN node) is to use the alias with a sidd
attached.

Gary

42. RE: [NETSIG:929] Re: Netrom function, source of answer...

From: roberts@ses6a.bt.co.uk
Date: Thu, 16 Feb 1995 09:50:30 +0000
To: netsig@tapr.org
Message-ID: <m0rf2rV-00014NC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

As fas as I can remeber those stats were created by someone who
was comparing IP routing over netrom with ROSE which is a pretty
weird way to use the code. Great if you want to make things look
slow but dumb in general as it represents the worst case backstop
of tunnelling over netrom.

What is actually going on is that you are measuring the netrom
fragmentation time (a one off) as well as network efficiency
and protocol efficiency.

What we lack are some basic network metrics of what consitiutes
'efficiency'. We trade of many parameters in our networks such
as channel efficiency, delay to users etc. Indeed, it could be
argued that we should set different metrics for different
services. For example telnet, chat etc sessions should be faster
and pre-empt ftp smtp or nntp messages (?). Should we use the

ip options to fields to signify when a frame is to receive different
treatment in its progress through routers ?. The obvious solution
is to set no option bits if you do not care, the delay bit to signify
minimum delays for telnet and convers etc sessions and the reliability
bit for nntp etc sessions.

IP frames with the reliability bit could go via VCs. Frames with the delay
bit set via UI frames and thereby bypass the VC queues but at the cost
of lower reliability.

Just a thought.

Dave (Wanting to be constructive rather than territorial) Roberts
G8KBB

43. Re: [NETSIG:934] Re: Netrom function, source of answer...

From: tmoulton@ram.net
Date: Thu, 16 Feb 95 06:22:07 EST
To: netsig@tapr.org
Message-ID: <15021573.18d6@ram.net>
Rendered body type: text/plain

>On Wed, 15 Feb 1995 tmoulton@ram.net wrote:
>
>> I think his answer said that if you are using the node names, hop by hop i
>t
>> is the same as node names end to end because the node establishes a Level
>4
>> session hop by hop anyway.
>
>But, if you monitor the whole path, you will see that this isn't true.

Ok, G1TLH was wrong, I was just explaining what I read here! I am no NetRom
expert. I also was a bit suprised... I expected the L4 connect to be between
the nodes that the user did node connects to.

>> and if you use the level 2 callsigns it will be a LITTLE slower.
>
>What is a level two callsign? The only way you can make a level two
>connect on a node (to another KNOWN node) is to use the alias with a sidd
>attached.
>
>Gary

44. Re: [NETSIG:935] Re: Netrom function, source of answer...

From: tmoulton@ram.net
Date: Thu, 16 Feb 95 06:35:06 EST
To: netsig@tapr.org
Message-ID: <15021573.18d7@ram.net>
Rendered body type: text/plain

Dave G8KBB wrote:

>As fas as I can remeber those stats were created by someone who
>was comparing IP routing over netrom with ROSE which is a pretty
>weird way to use the code. Great if you want to make things look
>slow but dumb in general as it represents the worst case backstop
>of tunnelling over netrom.
>

No Dave, it was AX25 traffic only, not IP. I will send the test results to
the net when I get to the office.

It was two nodes/switches and one user each, sending plain old ascii data.

Much like BBS's forwarding messages (Which we have more of than IP users
today)

Tom, W2VY

45. Re: [NETSIG:929] Re: Netrom function, source of answer...

From: Klarsen <k5di@kazak.NMSU.Edu>
Date: Thu, 16 Feb 1995 07:44:11 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950216074317.21559C-100000@kazak>
Rendered body type: text/plain

On Wed, 15 Feb 1995 tmoulton@ram.net wrote:

> >   Tom I am a lover of NOS so the x1j node is *VERY* nice...:-)
> >
> >-karl k5di
> >
>
> It will be interesting to see what you think of ROSE when it can handle UI
> frames...
>
> I'll let you know when it is ready....
>
> tom
>
        I promise to give it a try Tom. Drop me a line when it's ready.

-karl k5di

46. Network Performance Tests - The test results

From: tmoulton@smtplink.ram.com
Date: Thu, 16 Feb 95 11:07:12 EST
To: netsig@tapr.org
Message-ID: <9501167929.AA792961632@smtplink.ram.com>
Rendered body type: text/plain

I am trying to get this in html so that the graphics can also be
      presented via the web.

     Here is the test setup and results:
     ____

Performance Evaluation of Networking Firmware by Chuck Haste KP4DJT
KP4DJT@w4dph.fl/wchast@delphi.com

The following are the results of test done to establish throughput speed
benchmarks for answering user questions, and to have benchmarks for
future reference. The testing was done *NOT* to pit ROSE against TheNet
X1J but rather to determine what throughput would be had for both
systems in order to be able to respond to user questions. And also to
have a set of benchmarks for controllers running higher speed clock.

There are a large number of PacComm TNC's in use on both TheNet and
ROSE networks. When sysops ask the question of how fast does data move
through a stack, I was unable to give a good solid answer to that
question, now with these test I can answer the question for both systems.

In the process of collecting data I noticed the differences that started
appearing as the data blocks became larger, the larger blocks of data
represent those a BBS such as FBB would commonly present to the network.

Those block sizes also represent common block sizes that IP facilities
would present to the network (1k+ char IP frames for good solid links
over IP routers and ROSE, 236 char IP frames for NetRom). The smaller
blocks would represent those common to keyboard to keyboard or
conference applications.

Equipment used:
End PC's: Two 12mhz 286's running a program called Pingpong. The
                serial port running at 9k6 baud due to a limitation of
                pingpong.

End TNC's: PacComm Tiny II Mk II with 10mhz mods done. Both ports
                running 9k6 baud.

Network: Tiny II Mk 2 running 10mhz clocks. HDLC ports at 9k6 baud
                and wire lan (TI3DJT COAXLAN) running at 38k4 baud.

There were two units networked together over the COAXLAN.

Physical
Links: PC to TNC; RS-232, TNC to one side of network stack was
                wire, network stack to other TNC was a radio link.

Radio Link: TEKK KS-900 and KS-960 radios

Timing and other parameters:

TNC's: Frack = 1s, DWait = 0, Resptime = 0, TXDelay = 10*, MaxFrame=4
Nodes: Frack = 1s, DWait = 0, Resptime = 0, TXDelay = 10*, MaxFrame=7

Switches:Frack = 1000ms**, DWait = 0, Resptime = 1000ms,
TXDelay = 100ms*, MaxFrame=7

** ROSE allows much finer resolution but I wanted the timers to be equal to those on X1J.

Two Paclens were used, first 256 characters which is largest size on most AX.25 packet radio networks. Then to take into account TheNet's need to put the network overhead INSIDE the 256 char level 3 packets, I reduced the TNC Paclen to 236 to allow for the 20 characters of NetRom overhead.

ROSE extends the size of the level 3 frames to add the 3-5 characters of level 3 overhead, so a paclen reduction was not needed, but a comparison was made.

TXDelay was set to 100ms for all units, could have run much faster but I wanted a reference that others could reproduce with ease, each radio in this case had a slightly different minimum TXDelay, one being about 3 and the other 5.

There are four columns, they are as follows:

Block: The size of data blocks sent to TNC's

TNC SRTT
TNC to TNC Smoothed Round Trip Time in seconds, this one also includes PC overhead and is simply the test done with TNC's linked to each other.

ROSE SRTT
Smoothed Round Trip Time through the system with ROSE switches added. ROSE_SRTT minus TNC_SRTT = Network transit time.

Transit time
ROSE_SRTT minus TNC-TNC_SRTT = Transit_time (time through stack)

X1J SRTT
Smoothed Round Trip Time through the system with X1J nodes instead of ROSE. Again X1J_SRTT minus TNC_SRTT = Network transit time.

Transit time:
X1J_SRTT minus TNC-TNC_SRTT = Transit_time (time through stack)

Smoothed Round Trip Time was the average of 20 round trips, each block was tested 20 times and the average taken for the SRTT.

In the following graphs the bottom line is TNC SRTT, middle is ROSE SRTT and top is X1J SRTT.

Paclen = 256 characters

Size	TNC SRTT	ROSE SRTT	Transit Time	X1J SRTT	Transit Time
64	1.3	2.0	.7	2.2	.9
80	1.3	2.2	.9	2.8	1.5
128	2.0	2.7	.7	3.2	1.2
256	3.0	3.8	.8	3.8	0.8
512	4.1	5.5	1.4	6.5	2.4
1024	6.4	9.2	2.8	19.4	13.4
2048	10.3	14.6	4.3	43.0	32.7
4096	19.1	24.2	5.1	97.8	78.7

Paclen = 236 characters.

Size	TNC SRTT	ROSE SRTT	Transit Time	X1J SRTT	Transit Time
64	1.3	2.0	.7	2.1	.8
80	1.3	2.2	.9	2.7	1.4
128	2.0	2.7	.7	3.1	1.1
256	3.3	4.8	1.5	4.8	1.5
512	4.1	5.4	1.3	6.8	2.7
1024	7.0	8.9	1.9	19.0	12.0
2048	10.9	14.8	3.9	31.0	20.1
4096	18.6	25.9	7.3	56.1	37.5

Notice how that the jump to from the 512 block size to the 1024 block size causes a large slow down of X1J. Under a previous test where the actual block of data being sent was 522 chars length, the difference was ROSE 5.7 and X1J 9.3 seconds, so there appears to be a critical area somewhere just above 512 characters for TheNet.

Some of the times on the shorter data blocks were corrupted by retries on the RF link (noise from other equipment, maybe one day we will have a

screen room to test in!) In particular on ROSE this is a problem since the
TNC code thinks it is linking over a dual digipeater path, a retry will cause
long delays (relative to a non digipeat type connect) which will cause long
waits in the test. One case is the 256 char line in the first set of test
where both ROSE and X1J have a SRTT of 3.8, observing the ROSE test,
most of the RTT's were on the order of 3.2 seconds, but in order to
show real world operations, I have keep the times from the retried data in
to reflect actual delays.

In X1J there appears to be a bug that causes a transmission that times
out the watch dog timer, then about 60-70 seconds later the node comes
back to life, I removed this corruption from the two entries that had
that problem, figuring that this bug would be fixed. But for those of
you who would like to know what the SRTT was for those times they are
as follows:

Paclen 256 block 4096 SRTT with bad RTT was 104.9 seconds
Paclen 236 Block 2048 SRTT with bad RTT was 34 seconds.

This bug seems to cause this problem about every 30 minutes, and
NO THIS DOES NOT APPEAR to be a NODES broadcast, these were very
visible and quite short (only 2 nodes in the table).

This is NOT The final say, I would ENCOURAGE OTHERS TO TRY THE
SAME TEST, BUT DO NOT USE THE DEFAULTS IN EITHER EPROM, SET THE
TIMERS AND LENGTHS UP TO BE EQUAL.

Future TEST

I also plan to do these test shipping IP over the network, using
ROSE, NetRom, and the IP routers in X1J. I will test using a IP
frame of 1500 characters, this frame will be fragmented at the AX.25
layer and sent according to each network system. For the test with
IP I will be using a PING session between the two ends, this will
give me much better resolution, than the present program does.

I would also like to have a pingpong program that will resolve the
time better, this one appears to be too granular, and needs better
resolution.

I want to test the two systems while there is other traffic moving
through the nodes/switches, this will be a more "real world" test,
in order to do this I must set up a series of switches/nodes through
which other users are passing data, I also will need to run sampling
for longer times in order to get a better round trip time taking into
account activity changes over the same circuit.

I freely admit to being biased to ROSE and IP, but I have tried to
keep this bias out of these test, this is the reason I made the second
run reducing the paclen to avoid NetRom fragmentation, as you see there
was a small gain for X1J and a small loss for ROSE, but the difference
is still great at the larger frame sizes.

Whatever network you are running, the key to making it run even better
is the fine tuning of the timers and delays, a LAN channel is not going
to have the same parameters as a point to point link, nor is a 1200b
channel going to use the same timing as a 9k6 channel.

Chuck
kp4djt

47. TAPR.ORG Downtime

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 16 Feb 1995 11:25:44 -0600 (CST)
To: tapr-bb@tapr.org (TAPR-BB mailing), hfsig@tapr.org (HF SIG mailing),
netsig@tapr.org (NETSIG mailing), bbssig@tapr.org (BBS SIG mailing),
fccreg@tapr.org (fcc), tapr-board@tapr.org (TAPR Board),
pcs@tapr.org (TAPR PCS Project), dsp-93@tapr.org (DSP-93 Build),
dsp93dev@tapr.org (DSP93 Development), aprssig@Alice-Thurman.tenet.edu,
tuc52@tapr.org (TUC-52), tnc95@tapr.org (TNC-95)
Message-ID: <199502161725.LAA03238@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

TAPR.ORG Downtime 2/16/95

The TAPR.ORG system will be moving locations on Monday morning, February
20th, 1995.

During this move, the system will be unavailable. A second message will be
posted when the system is fully operational.

48. ROSE / X1J timing comparisions

From: Howard Goldstein <imotion@bb.iu.net>
Date: Thu, 16 Feb 1995 12:12:07 -0500
To: netsig@tapr.org
Message-ID: <Pine.3.89.9502161214.E155-0100000@penny.n2wx.ampr.org>
Rendered body type: text/plain

tmoulton@smtplink.ram.com wrote:

> Paclen = 256 characters
> Size TNC SRTT   ROSE SRTT   Transit Time   X1J SRTT Transit Time
> 256   3.0   3.8   .8   3.8   0.8
> 4096 19.1   24.2   5.1   97.8   78.7
>
> Paclen = 236 characters.
> Size TNC SRTT   ROSE SRTT   Transit Time   X1J SRTT Transit Time
> 256   3.3   4.8   1.5   4.8   1.5
> 4096 18.6   25.9   7.3   56.1   37.5
>
> Notice how that the jump to from the 512 block size to the 1024 block size
> causes a large slow down of X1J. Under a previous test where the actual
> block of data being sent was 522 chars length, the difference was ROSE
> 5.7 and X1J 9.3 seconds, so there appears to be a critical area
> somewhere just above 512 characters for TheNet.

I wonder if the disparity is due to X1J's failure to queue up multiple
frames for transmission all at once? ROSE does this which results in more
efficient channel utilization.

Howie

49. Re: [NETSIG:939] Network Performance Tests - The test results

From: Klarsen <k5di@kazak.NMSU.Edu>
Date: Thu, 16 Feb 1995 11:53:41 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950216114602.25686A-100000@kazak>
Rendered body type: text/plain

I didn't want to comment on Tom's data since it's clear that
ignorance abounds here. Hear are FACTS about the X1J node software you
are saying is slow.

        1. The NetRom part is EXACTLY 100% a TheNet Version 1.0 and
nothing else period!

        2. The reason Hams use X1J is because the thing has a real NICE
IP Router. I have already shown that the TCP data passes faster than the
same data going by NetRom.

        So with that said, Tom, are you sure the TheNet part of X1J was
set up properly? I have the old setup documentation for version 1 which I
translated to english. If they will be of use I can send them to you.

73, de karl k5di

50. Re: [NETSIG:942] Re: Network Performance Tests - The test results

From: tmoulton@ram.net
Date: Thu, 16 Feb 95 14:27:56 EST
To: netsig@tapr.org
Message-ID: <15021573.18dc@ram.net>
Rendered body type: text/plain

>   I didn't want to comment on Tom's data since it's clear that

It is not my data, KP4DJT collected it and he does have ready access to
people who do use X1J.

>ignorance abounds here. Hear are FACTS about the X1J node software you
>are saying is slow.

I don't say it is slow, I am just saying that in the tests that I was given
results for that ROSE was faster.

>
>   1. The NetRom part is EXACTLY 100% a TheNet Version 1.0 and

>nothing else period!

That's true, X1J, TheNet, G8BPQ and NetRom all use the same protocol.
I never said otherwise.
>
>   2. The reason Hams use X1J is because the thing has a real NICE
>IP Router. I have already shown that the TCP data passes faster than the
>same data going by NetRom.

None of the tests I am talking have ANYTHING to do with IP or TCP, just plain
ole AX25 PID F0 (aka regular TNC connections)

>   So with that said, Tom, are you sure the TheNet part of X1J was
>set up properly? I have the old setup documentation for version 1 which I
>translated to english. If they will be of use I can send them to you.
>

I think it was, the tests were also performed (AX25 Data *NOT* TCP) by Don
N2IRZ using settings that NEDA uses for nodes.

The best retort I have is for you to set up a node "right" for AX25 Data and
I'll get a copy of the PINGPONG program to you for you to test with.

It takes 2 nodes and 2 TNC's in TNC mode.

tom, w2vy

51. Channel simulator

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Thu, 16 Feb 95 12:48:49 MST
To: netsig@tapr.org
Message-ID: <m0rfCBa-0000ZVC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

When discussing data transfer rates between different protocols, it's easy
to start comparing apples and oranges. Be nice if we had a software package
that would simulate CONTROLLED channel conditions so's a benchmark could
be established with which to compare data protocols under repeatable
conditions.
73 de Jack

52. Re: [NETSIG:944] Channel simulator

From: tmoulton@ram.net
Date: Thu, 16 Feb 95 15:30:57 EST
To: netsig@tapr.org
Message-ID: <15021573.18dd@ram.net>
Rendered body type: text/plain

>When discussing data transfer rates between different protocols, it's easy
>to start comparing apples and oranges. Be nice if we had a software package
>

I do not think that we are looking at Apples and Oranges here.

The test I am talking about was AX25 TNC Data in both cases.

>that would simulate CONTROLLED channel conditions so's a benchmark could
>be established with which to compare data protocols under repeatable
>conditions.
>73 de Jack

The testing was done in a closed network environment (Copper) with parameters
as they would be set on radio.

tom

53. Internet Gateway pointers

From: David Rush <rush@erg.sri.com>
Date: Thu, 16 Feb 95 15:22:50 -0600
To: netsig@tapr.org
Message-ID: <9502162122.AA22476@cacfs.ks.erg.sri.com>
Rendered body type: text/plain

Can anyone provide pointers to documents on using JNOS (or other?) to
run a gateway between a NOS-style AmprNet and the Internet (coming into
the JNOS box via Ethernet)?

David

```
------------------------------------------------------------------------------
 David Rush                              Internet:  rush@erg.sri.com
 SRI International                       AmPRNet:   david@n0oxh.ampr.org
 Leavenworth, Kansas                     AX25Net:   n0oxh@w0xk.#nwmo.mo.usa.na
 (sister city to Wagga Wagga, Australia) Phone: 913 682 9101 Fax: 913 682 9119
```

54. Re: [NETSIG:932] Re: JNOS problem with COM2 port

From: dino@cam.org (Dino Moriello)
Date: Thu, 16 Feb 1995 16:57:53 -0500
To: netsig@tapr.org
Message-ID: <199502162157.AA22848@rouyn-ogc.hydro.qc.ca>
Rendered body type: text/plain

I will try to tie them high, but somehow I think this is part of the
problem, right now my cts is always low, and it works , except at some point
I think if it goes high or the PC thinks it went high, problems start. I
realise that this line must toggle in response to the activity on the matrix
but even with that line disconnected it hangs. I'm starting to think it may
be software, but at this this point I will have to wait for a week, until I
get back home to do more testing.

Thanks for your help. I hope I can get this to work.

73 de dino

>
>attach asy 0x2e8 5 nrs local 2048 256 19200 k0vm-7
>
>I beleive that i do have the CTS/DTR line tied up however...
>
>-73- AL -----------+-------------------------------------+
>Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
>Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
>--------------------+ internet : al@ia.net   -------------+
>
>
+----------------------------------+--------------------------------------+
Dino Moriello (Telecom Tech)	WARNING: The Surgeon General has
moriello@rouyn-ogc.hydro.qc.ca	determined that the Internet
Packet: VE2DM@VE2FKB	can be hazardous to your health.
+----------------------------------+   Avoid prolonged exposure.
Please E-mail all USENET replies.	--------------------------------------+
+----------------------------------+   James Bay, Quebec, CANADA

55. Re: [NETSIG:943] Re: Network Performance Tests - The test results

From: rmackay@bud.peinet.pe.ca (Ron VE1AIC)
Date: Thu, 16 Feb 1995 20:45:56 -0400
To: netsig@tapr.org
Message-ID: <9502170045.AA12835@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>The best retort I have is for you to set up a node "right" for AX25 Data and
>I'll get a copy of the PINGPONG program to you for you to test with.
>
>It takes 2 nodes and 2 TNC's in TNC mode.
>
>tom, w2vy
>
Good idea Tom, maybe copy it into the TAPR ftp and we can all try it
"at home" and compare results. Then see what parameter tweaking does
for it.
73 - Ron
ve1aic@ve1aic.pe.can.noam

56. Re: [NETSIG:935] Re: Netrom function, so

From: WCHAST@delphi.com
Date: Thu, 16 Feb 1995 20:59:13 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HN4Q53IH5E9ANPWM@delphi.com>
Rendered body type: text/plain

Well, I guess that several people did not read my origenal msg with the
timing comparissons of TheNet and ROSE.

First let me establish one thing, the timers on TheNet were setup by

Paul G4BKI, who knows TheNet timing quite well even in his sleep. I set up the ROSE timers and we tried as much as possible to make give them simular status so that there would be as flat a field as possible.

The data sent WAS NOT IP frames, (if you will read, at the end of the msg, I point out that my desire was to do that test with the different options available to us) and I also asked OTHERS to setup and try the same test in order to validate or negate MY work. So far I only know of one who has done so. (Please NO stones until you DO!) At that time I was doing that in order to be able to answer questions of customers who by TNC's and put them into service on networks, both ROSE and TheNet. I enlisted Paul's help because he knows TheNet settings so well and because he follows that networking concept, that with the idea that it would tend to cancel out some of my bias. (I do try to be at least a LITTLE bit scientific ;->)

I believe that the copy of my work that T. Moulton put on the NETSIG pretty well establishes this, but I have tried to make this more clear here.

I feel that each system has a place out there, and we all need to work together for more "interoperability" at this point I see this happening more in the ROSE - IP realm in truth. I think that the other networks need to be a bit more "ecumenical" in their operation, PID transparency would really make it nice, for example. I can not get a NetRom type network to pass the PID of a distant ROSE network, but our ROSE network will do so for NetRom. Just that alone would make a big difference for us.

Anyhow, these are just my observations after coming back from a trip and finding some of my work "misquoted". Basicly I would say you should try and reproduce the work I did just as I have asked, and then tell me what you saw.

No axe to grind, just want the facts.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121: 3100813077

---

57. RE: [NETSIG:944] Channel simulator

From: roberts@ses6a.bt.co.uk
Date: Fri, 17 Feb 1995 09:47:00 +0000
To: netsig@tapr.org
Message-ID: <m0rfPMD-00011PC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

I have to agree with Jack.

We don't really have any basic definitions of efficiency or of user requirements, as I was trying to point out last time.

The ability to cope with huge packets and fragment them efficiently is just one aspect of the performace of gateways between dissimilar networks. I have not had the time to trawl through the tests cited to work out what we are actually testing here.

There are many competing demands on our systems - flexibility, resilience, ease of management, dissimilar traffic types, competing user requirements such as :

> "My cluster traffic needs highest priority"
> "Stop that plain vanilla intefering with my FTP"
> "Why can't I get to chat to Fred - it's all this IP stuff"

Forgive me for bringing up an old issue but I'll repeat it. The professional world is going towards Intelligent Networks that provide pretty neat new services and separate the switching systems from the intelligence. We should heed that if we want to stay at the forefront of technology. For example, I'd like to be able to take my IP system to the other side of the UK and *easily* get service - including my mail. Yes, I know the bandwidth is not up to it yet but high speed links are coming and it takes many years to get new protocols and systems designed. We will not have the intelligence layer done by the time that the network is bettered

unless we start to work at it. I'm not talking about replacing AX.25
or IP, it's about a layer of intelligence that uses the links in a
coherent way to provide an intelligent service over which voice,
TCP/IP or other things may be carried.

We need to consider this now. This group is at the forefront, lets
leep it there.

Dave

58. Re: [NETSIG:946] Internet Gateway pointers

From: nielsen@primenet.com (Bob Nielsen)
Date: Fri, 17 Feb 1995 05:08:04 -0700
To: netsig@tapr.org
Message-ID: <199502171207.FAA25418@mailhost.primenet.com>
Rendered body type: text/plain

David Rush wrote:

>Can anyone provide pointers to documents on using JNOS (or other?) to
>run a gateway between a NOS-style AmprNet and the Internet (coming into
>the JNOS box via Ethernet)?

Anonymous ftp to minnie.cs.adfa.oz.au will get you much information on
setting up gateways. I don't remember all the individual file names, but
browse the directories and you will find them.

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@crc.w6swe.ampr.org
                           WWW: http://primenet.com/~nielsen/

59. GRAPES-Based Repeater

From: "Rick Whiting" <Rick_Whiting@ATK.COM>
Date: 17 Feb 1995 14:02:13 -0600
To: "Rec.Radio.Publish Digital" <Ham-Digital@UCSD.Edu>,
        "Post Netsig TAPR" <netsig@tapr.org>
Message-ID: <199502171956.NAA17490@ATK.COM>
Rendered body type: text/plain

Subject: Time:1:47 PM
  OFFICE MEMO   GRAPES-Based Repeater   Date:2/17/95
I'm interested in configuring a 56Kbd repeater based on the GRAPES modem/PI2
card to serve as a backbone for our LAN. I'd appreciate getting an e-mail
address from anyone who's been down this road already and would be able to
answer some questions. By the way, are existing implementations operating as
bit regenerating repeaters or relaying frames?

60. Re: [NETSIG:952] GRAPES-Based Repeater

From: janderson@infotac.ram.net (Jack Anderson)
Date: Fri, 17 Feb 95 15:59:29 -0500
To: netsig@tapr.org
Message-ID: <15021591.130@infotac>
Rendered body type: text/plain

Please wait a moment

61. Mitrek Info

From: Jim Oty <joty@aoc.nrao.edu>
Date: Fri, 17 Feb 1995 15:16:52 -0700
To: netsig@tapr.org
Cc: joty
Message-ID: <199502172216.AA28986@zia.aoc.nrao.edu>
Rendered body type: text/plain

I just realized that I didn't thank all those that answered my
querry about Mitrek tranceivers. Thanks, I now know what I have.
Now I need to find some channel elements and schematics for them.

I also saw a posting here from a gentleman from Albuquerque who was
asking about networking and frequency coordination for this area. I
thought I copied his e-mail address but must have it wrong. I would
be interested in talking to you about linking to Albuquerque (the
address I copied was martins@scs.phillips.com). I fyou are out there
please send me an e-mail.

Jim, WB5GWH
Socorro, NM

62. RE: [NETSIG:954] Mitrek Info

From: Murphree Michael A <mamurphree@space.honeywell.com>
Date: Mon, 20 Feb 95 07:40:00 PST
To: netsig <netsig@tapr.org>
Message-ID: <2F48C421@smtpdos.space.honeywell.com>
Rendered body type: text/plain

>I just realized that I didn't thank all those that answered my
>querry about Mitrek tranceivers. Thanks, I now know what I have.
>Now I need to find some channel elements and schematics for them.

UHF manual w/schematics part no. is 68-81045E75, $11.55
from Motorola 1-800-422-4210.

Mike

63. Re: [NETSIG:952] GRAPES-Based Repeater

From: Barry McLarnon VE3JF <bm@hydra.carleton.ca>
Date: Fri, 17 Feb 1995 22:17:30 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199502180317.WAA11005@hydra.carleton.ca>
Rendered body type: text/plain

> I'm interested in configuring a 56Kbd repeater based on the GRAPES modem/PI2
> card to serve as a backbone for our LAN. I'd appreciate getting an e-mail
> address from anyone who's been down this road already and would be able to
> answer some questions. By the way, are existing implementations operating as
> bit regenerating repeaters or relaying frames?

Seek and ye shall find: 56krptr.txt, 56krptr1.ps, and 56krptr2.ps, ftp'able
from hydra.carleton.ca in pub/hamradio/packet/modems. The postscript files
are the schematics... I'll get this stuff up on our Web server too, if I
can get 'em legibly converted to gif or jpeg format. Our implementation
is a bit regenerator... the fifo in it introduces a nominal delay of 16
bit times, or about 290 microseconds.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | AMPRnet: barry@va3tcp.ampr.org
  Packet Working Group | FreeNet: aa187@freenet.carleton.ca

64. RE: [NETSIG:949] Re: Netrom function, so

From: roberts@ses6a.bt.co.uk
Date: Fri, 17 Feb 1995 17:03:21 +0000
To: netsig@tapr.org
Message-ID: <199502201923.NAA02393@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Hi Chuck

If you want netrom to pass rose traffic, let me know exactly what
you want. No-one has ever asked. I've already done a texnet interface.
If it is feasible, I'll have a go. I will confess I know little of
ROSE. How would you like it to work ? Connect to TheNet at L2
with another PID that would tunnel via Net/Rom ? Let's make
this discussion constructive. Tunnelling connection oriented lower
layer protocols over a connectionless network protocol will be
interesting.

Timing is a bit critical. If it is easy to do, i'll get it in the
next release. If not it will have to follow later.

The next release is in beta right now and as it currently stands
will add the following :

  * The buffer loss problem has been fixed
  * The ARP table is automatically updated from ARP requests & replies
  * The node maintains a second heard list of L3 Netrom nodes that
    gateway through the node
  * A bug in the copying of digipeated frames in KISS mode 2
    has been corrected

```
  * A defensive port flush function has been added
  * Link list integrity checking has been extended to check
    reverse links
  * A bug in handling of BBSALIAS, HOSTALIAS and DXCALIAS has
    been fixed
  * The USER list shows circuit choke status for patchcord
    connections.
  * BBS, HOST and DXCLUSTER are cleared properly on cold start
  * The ACL checks the end user call as well as the node call
    in accepting connections.
  * The Dev Meter and S Meter ADC channels may be used as general
    purpose ADC channels if required.
  * Code improvememnts mean that CPU loop counters show about 25%
    higher values when idling.


Dave
```

65. TAPR.ORG Location Change

```
From: Greg Jones <gjones@tenet.edu>
Date: Mon, 20 Feb 1995 15:23:15 -0600 (CST)
To: tapr-bb@tapr.org (TAPR-BB mailing), bbssig@tapr.org (BBS SIG mailing),
        netsig@tapr.org (NETSIG mailing), dsp-93@tapr.org (DSP-93 Build),
        hfsig@tapr.org (HF SIG mailing), aprssig@tapr.org
Message-ID: <199502202123.PAA09624@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain
```

```
TAPR.ORG has been relocated and has a new numeric IP address of:

   204.96.214.85

DNS servers should have been updated starting yesterday.....but just in case
yours is a little slow, you can use the numeric IP until things get fully
updated.

The new location allows for a faster connection into Internet which should
help the site in the long run.

Thanks to Lee, N5LYT, for his continued help and effort on the TAPR.ORG
site.

Cheers - Greg
```

66. Re: Netrom function

```
From: mfoster@amoco.com (Michael H. Foster)
Date: Mon, 20 Feb 95 16:20:34 CST
To: netsig@tapr.org
Message-ID: <199502202220.AA02955@interlock.amoco.com>
Rendered body type: text/plain
```

```
Hello Dave and Chuck.

Chuck, I hope you keep an open dialog on Dave's offer.  No doubt this could be controversial
as well as a much needed bridge of networks.

Northern Oklahoma, southern Kansas, southwestern Missouri are x1j strongholds. Get x1j talking
to rose networks in southwest Oklahoma, and north Texas transparently, and see what happens.

Texnet provides ax25 connectivity to x1j and rose stations, but is not likely to support IP anytime soon

(altho we have discussed it with a programmer for texnet several times), so there is no bridge there.
As always, each one has it's advantages and disadvantages making it difficult to persuade node ops to
switch.

Should they have to switch if the two main programmers are talking?  What do you think?

- Mike
wa5txx
```

67. Re: [NETSIG:959] Re: Netrom function

```
From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 20 Feb 95 14:52:11 PST
To: netsig@tapr.org
Message-ID: <9502201452.ZM11735@hanko>
Rendered body type: text/plain
```

```
On Feb 20,  4:46pm, Michael H. Foster wrote:
> Subject: [NETSIG:959] Re: Netrom function
> Hello Dave and Chuck.
```

>
> Chuck, I hope you keep an open dialog on Dave's offer. No doubt this could
be controversial
> as well as a much needed bridge of networks.
>
> Northern Oklahoma, southern Kansas, southwestern Missouri are x1j
strongholds. Get x1j talking
> to rose networks in southwest Oklahoma, and north Texas transparently, and
see what happens.
>
> Texnet provides ax25 connectivity to x1j and rose stations, but is not likely
to support IP anytime soon
> (altho we have discussed it with a programmer for texnet several times), so
there is no bridge there.
> As always, each one has it's advantages and disadvantages making it difficult
to persuade node ops to switch.
>
> Should they have to switch if the two main programmers are talking? What do
you think?
>
> - Mike
> wa5txx
>-- End of excerpt from Michael H. Foster

I think the idea of some bridge capability is excellent!

Please get John, G8BPQ into the loop on this if possible.

Don't think he has internet access, so you might have to
use the ham radio net to get to him: g8bpq@gb7bad.gbr.eu

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

68. Fix for scrambled calls?

From: david@wilson.raider.net (David R. Wilson)
Date: Mon, 20 Feb 1995 17:15:03 -0600 (CST)
To: raider!knuth!tapr.org!netsig
Message-ID: <m0rghJo-0005IIC@wilson.raider.net>
Rendered body type: text/plain

Hi everyone,

I am sure that this has been brought up before, but I have not run across it.
Does anyone have a fix for scrambled calls when using a 1274 MFJ modem and
the kiss eprom? I have 3 of these beasts running at 9600 baud, and lots
of trashed calls in the heard list. I am running each of these under various
flavors of JNOS.
My apologies if this is an old subject.

Thanks
Dave

--
David R. Wilson, WB4LHO
Smyrna, Tennessee USA
INET: david@wilson.raider.net
UUCP: ...!uunet!raider.net!wilson!david

69. Re: [NETSIG:961] Fix for scrambled calls?

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Mon, 20 Feb 1995 16:31:23 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199502210031.QAA11136@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> I am sure that this has been brought up before, but I have not run across it.
> Does anyone have a fix for scrambled calls when using a 1274 MFJ modem and
> the kiss eprom? I have 3 of these beasts running at 9600 baud, and lots
> of trashed calls in the heard list. I am running each of these under various

> flavors of JNOS.
> My apologies if this is an old subject.

No apologies needed, and yes, it's an old topic - but one that it doesn't hurt to mention periodically.

If you're not running 16550 UARTs in your serial board, you'll want to do so. At medium RS232 speeds (9600 and over), the serial port tends to overrun. The CPU tells it to stop, but it can't react fast enough and loses a bit or two. The 16550 has a buffer to store these otherwise lost bits. The ASYSTAT command in JNOS will tell you whether it recognizes a 16550 on that port.

-o-

Also, there is a mod to the g3ruh modem that helps with garbage calls. This gates the RxData from the modem and keeps random noise from generating garbage calls.

>From "The 9600 Baud Packet Handbook" (used with permission, of course :-)

4.3.2.1 G3RUH "GARBAGE" MOD

by Steve King kd7ro

Gets rid of random garbage "calls" in MHeard

This mod makes sure that the modem will send all zeros to the TNC until the modems PLL is locked on a signal. This means that the TNC will not be reading garbage coming in to the UART all the time.

1. Remove socket for U11 (74HC14)
2. Insert the 74HC14 directly into the PC board.
3. Lift all the pins of a 74HC00 except 7, 12 and 14.
4. Bend pins so they are pointing straight out.
5. Cut back the bent pins so the 74HC00 can be piggybacked on the 74HC14.
   Without removing the socket on U11, I would not have been able to slide the modem and Tiny-2 back into the box (you may not have this problem).
6. Cut the trace from U11 pin 12 to U20 (74HC157) pin 13.
7. Solder the 74HC00 on top of U11 (soldering pins 7, 12 and 14).
8. Wire U10 pin 13 (LM339) to the 74HC00 pins 9 and 10.
9. Wire 74HC00 pin 8 to pin 13.
10. Connect pin 11 of the 74HC00 to pin 1 and 2 of the 74HC00.
11. Connect pin 3 of the 74HC00 to pin 13 of U20 (74HC157).
12. Put a piece of tape over the top of the 74CH00 to insulate from the case.

The DCD signal coming from U10 (LM389) is low true so I invert it using one of the nand gates (pins 8, 9 and 10). This is used to qualify the RXD signal from the 74HC14 (pin 12). Pin 11 of the 74HC00 is the RXD signal (low true) qualified by the DCD signal which is LOCK DETECT. One more inversion of this signal (74HC00 pins 1, 2 and 3) and I have the qualified RX DATA signal which is connected to U20 (74HC157) pin 13.

RX DATA is always zero until the PLL is locked to the data. Then RX DATA will be the true data coming from the unscrambler or zeros if we are not locked.

-- kd7ro
---------- EOF ----------

Hope this helps.

-- mike

70. Re: [NETSIG:957] Re: Netrom function, so

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Mon, 20 Feb 95 19:18:34 MST
To: netsig@tapr.org
Message-ID: <199502210424.WAA18052@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Regarding features in a future X-1J release, what would really ring my bell is a stat showing link quality. For some time BPQ has yielded link quality info by giving us the R * command. This shows us link

quality in terms of retry ratios over a period of time. Since this is
an indication of *real* link conditions it has proved to be very useful
for BPQ nodeops and users.

73 de Jack

71. Funet on WWW

From: Richard.Saue@jur.uib.no (Richard Saue)
Date: Tue, 21 Feb 1995 10:50:29 +0000
To: netsig@tapr.org
Message-ID: <v01510102ab6f8408b707@[129.177.155.182]>
Rendered body type: text/plain

Hi !

Recently I have seen postings stating trouble to reach FTP.FUNET.FI due to
limit on anonymous login. Those who can use World Wide Web may try:

HTTP://WWW.FUNET.FI:80/PUB/HAM

This works great from Norway....

73 de Richard - LA4SGA

72. Your Comments and advise . On 2 Ham Gateway in the same TOWN

From: Daniel Audet <daudet@LLC.org>
Date: Wed, 22 Feb 1995 21:12:26 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.3.85.9502222126.A22546-0100000@biko.llc.org>
Rendered body type: text/plain

Hi Every one
Just put a Internet Gateway in Quebec City deserving a populated area of
about 700k or more covering a territory with a radio of about 60 miles
around QUebec City
there is 2 Full services BBS with a lots of users and 3 mores BBS that
the net is tie to the WAN.
I am planning to get a link to BAR at 9.6k and another to a second
platform running JNOS at 2mb on 902-928 and then split it to 2 locals
users freq and from then il could provide acces to other BBS on the own
link they supply.
BUt the main problem is the other large BBS He does not want to tie to
our net. He want it own acces to Internet. But to me 2 GATE in the same
town into the same block of address 44.135.70 and 71 , i think it will
be difficult to control all those address.
Because if i put 71 to QBGATE an 70 to other GATE users of other gate
at .70 if the come stby on QBGATE freq the routing to 70 add will got to
GATE and not QBGATE. And the SYsop of the other BBS Think that ip routing
is done automaticatily like netrom NODE.
SO i would like to get advise from anybody who did encounter a problem like
this one.
So any suggestions will be welcome

---
73 de Dan,   ax.25net: VE2PNK@VE2BAR.#QBC.PQ.CAN.NA
                  amprnet: not yet but it's comming
                 internet: daudet@biko.llc.org
                      fax: 418-622-5363
                      tel: 418-622-3238
---

73. gated message (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 23 Feb 1995 01:53:15 -0600 (CST)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199502230753.BAA26350@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

I didn't really have a place to send this help message - so thought someone
on here might be able to help this person.

Please send response back to him and not the list, since he is not on here.

Hope someone can help.

Cheers - Greg

Forwarded message:
>From nolan.lee@f5.n390.z1.fidonet.org Tue Feb 21 03:06:51 1995
From: Nolan.Lee@f5.n390.z1.fidonet.org (Nolan Lee)
Date: 17 Feb 95 15:15:08 -0500
Subject: gated message
Message-Id: <6f8_9502180302@nisc.fidonet.org>
Organization: FidoNet Nameserver/Gateway
To: TAPR@tapr.org
X-Gateway: nisc.fidonet.org (1:1/31)
X-Gateway-Postmaster: postmaster@nisc.fidonet.org
X-Comment: For info on sending e-mail to FidoNet,
X-Comment: Send to: 'info@fidonet.fidonet.org'

I've got a couple of old Dec Rainbow PC's sitting around here that
I'd like to put back into use. <g>

Are there any 'oldtimers', as far as packet goes, that have used the
Rainbow to control a TNC in the past?

If so, I'd like to contact them for help in this project.

thanks in advance,
Nolan
KB5QCN

--- Msgedsq 2.2e

74. netrom efficiency

From: roberts@ses6a.bt.co.uk
Date: Thu, 23 Feb 1995 08:47:15 +0000
To: netsig@tapr.org
Message-ID: <199502230848.CAA14003@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

From: NAME: Dave Roberts
        FUNC: DTI14
        TEL: 0473 224566   <ROBERTS AT A1 AT SES6A>
Date: 21-Feb-1995
Posted-date: 21-Feb-1995
Precedence: 1
Subject: RE: [NETSIG:957] Re: Netrom function, so
To: NAME: roberts@ses6a.bt.co.uk <"roberts@ses6a.bt.co.uk"@R11F@MRGATE@SES6A>

Well,

I had a bit of a think over the weekend.

In summary - the tests performed did *not* set the netrom parameters
correctly, and hence the conclusions drawn are wrong. I will explain below.

First though, my congratulations to Chuck for a carefully run set of tests.
It has set me thinking about measurement and I have a change to make.

The conclusions though are wrong, so if you have done your HTML page Tom,
scrap it.

I firstly set to analysing the results posted. I concentrated on the
236 byte table. There were two interesting facts

1. The anomaly noted by Chuck between 512 and 1024.
2. The fact that the graphs of time vs size has a kink in it.

The data revealed that there is a per frame delay being introduced.
Averaging over the last 512 buyes of the 1024 byte results, the last
1024 bytes of the 2048 byte result and the last 2048 bytes of the
4096 byte lines showed a per frame delay being introduced of 4.8,
2.1 and 2.0 seconds respectively.

Secondly, what caused the hike in time ?. One possible conclusion
that can be drawn is that the default values for the netrom protocol
were being used. As explained later I then sujected this to actual
test and the results correlated well with Chuck's tests.

What appeared to be happening is this. The default values for window
size and L4 ack delay are 4 frames and 6 seconds respectively. The blip
above 512 is the first such delay. In the long term this settles

down to 6/4 seconds per frame, corrected for probabilistic delays
as 1.65 seconds as compared to the trend from the data of a bit
under 2 seconds. Close enough. Correcting for frame sizes would turn
this into 1.7 seconds.

I then set up a test as below.

NOS was used to emulate the two user TNCs and data source, by transferring
a 4K byte file and timing from start of send to data received. PC to
Node links were 9k6 RS232 to the RS232 ports (corresponding to the 9K6
radio links in Chuck's tests.

The two nodes (running X1J4) were linked by cross connecting the modem
disconnect headers.

The parameters were set as per Chuck's test.

The TNCs were 4.9 MHz as opposed to the 10 MHz units Chuck used. The
inter node link in Chuck's system ran at 38 K baud. The fact that this
test ran so slowly indicated that the problem was a timer related one
when the link was so fast.

At 1200 baud on the radio link, the transfer took a little over a minute.
At 9600 baud it took 55 seconds. Chuck measured 56.5. Note that small
improvement gained reinforced the timer theory. Note the result
is effectively as per Chuck's. Differences in the tests account for
the discrepancies probably.

I then set up the netrom parameters properly - waindow size as per
Chuck's ROSE settings and ACK delay - significantly - to 1 second.

The delay time dropped to 35 seconds.

I then upped the speed on the inter node link to 19K2 and the time
dropped to 28 seconds (ROSE clocked 25 seconds in this test but
I am running at 19K2 not 38K4 and my TNCs are running at 5 not 10
MHz).

Chuck, I congratulate you on your tests but it is clear that we
need to cooperate to get more repeatable tests and as you pointed
out more tests per se. I would like to work with you first of all
to establish a standard test configuration that is easily repeatable
and then to devise other tests.

Tom, I hope you will with good grace accept your error. You made
a number of statements during this episode that were a bit dubious.

Both ROSE and Net/Rom have their place. What was being tested was
the configuration of networks. Let us look now to the future (that
is what this group is for is it not ?). Who's for an Amateur
Intelligent Network (IN) then ?

Dave

P.S. One good thing - thanks Chuck - The minimum L4 ack delay is
1 second. In point to point links like this, this is too long.
I will modify the code so that a zero delay can be set if desired.
It results in more traffic on the network but faster throughput
(what were our definitions of 'efficiency ' ?).

75. Re: Radios for higher speeds

From: kb7eec@uugate.wa7slg.ampr.org (Gary Crum)
Date: Thu, 23 Feb 1995 04:08:43 -0600
To: netsig@tapr.org
Message-ID: <199502231008.EAA14353@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Hello, netsig list,

It looks like there is a place to FTP old netsig mail, but it is empty!
I mean, the directory ftp://ftp.tapr.org/tapr/SIG/netsig/mail_archive .
Darn, I was hoping I could get familiar with what has been discussed here.
Maybe I should try the listserv e-mail address.

Anyway, below is a topic for discussion. Any suggestions for radios to go
along with SPRINT-2 (now called SPIRIT-2) controllers set for 38400bps, i.e.
60KHz bandwidth? (And, I realized that the G3RUH uses 90KHz at 57600bps,
not 100KHz as in my message below.) Say, for the 220MHz band or higher
frequency bands, including microwave -- gunnplexers perhaps?

-Gary

Subject: Re: Radios for higher speeds
To: kb7eec@uugate.wa7slg.ampr.org
Date: Sun, 19 Feb 1995 08:28:18 -0500 (EST)
In-Reply-To: <9502190550.AA03620@n.kb7eec.ampr.org> from "Gary Crum" at Feb
18, 95 10:50:46 pm
From: jra@ag9v.ampr.org
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 1125

Hi Gary --

This message is just the sort of thing we like to talk about on the TAPR
netsig mailing list. You can subscribe via mail to listserv@tapr.org with
"subscribe netsig" in the body, and messages are addressed to "netsig@tapr.org".

Hope to see you there...

73,
John   AG9V

You (Gary Crum) write: (in tcp-group@ucsd.edu list)
>
>Here's a timely topic: the PacComm SPRINT-2 packet controller. Just
>received one yesterday, for a local group. It is TNC2-compatible, and via
>jumper settings can be set to terminal and modem/radio speeds of 9600bps and
>38400bps. This is the SPRINT-2 NODE. The SPRINT-2 BACKBONE model comes with
>primary and secondary filters set to 38400bps and 57600bps, as opposed to the
>9600/38400 filters in the NODE model.
>
>Hope to see more discussion about radios accomodating G3RUH modems set for
>38400bps and 57600bps, i.e. 60KHz and 100KHz bandwidth usage. Has anyone
>done it, microwave or not?
>
>(Comments on the Kantronics KPC-9612 and other new products are of interest,
>too!)
>

76. Re: [NETSIG:967] netrom efficiency

From: Klarsen <k5di@kazak.NMSU.Edu>
Date: Thu, 23 Feb 1995 08:28:04 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950223082009.18727D-100000@kazak>
Rendered body type: text/plain

On Thu, 23 Feb 1995 roberts@ses6a.bt.co.uk wrote:

>
>
>
>
> From: NAME: Dave Roberts
>   FUNC: DTI14
>   TEL: 0473 224566   <ROBERTS AT A1 AT SES6A>
> Date: 21-Feb-1995
> Posted-date: 21-Feb-1995
> Precedence: 1
> Subject: RE: [NETSIG:957] Re: Netrom function, so
> To: NAME: roberts@ses6a.bt.co.uk <"roberts@ses6a.bt.co.uk"@R11F@MRGATE@SES6A>
>
> Well,
>
> I had a bit of a think over the weekend.
>
> In summary - the tests performed did *not* set the netrom parameters
> correctly, and hence the conclusions drawn are wrong. I will explain below.
       Lots of stuff removed.

> Tom, I hope you will with good grace accept your error. You made
> a number of statements during this episode that were a bit dubious.
>
> Both ROSE and Net/Rom have their place. What was being tested was
> the configuration of networks. Let us look now to the future (that
> is what this group is for is it not ?). Who's for an Amateur
> Intelligent Network (IN) then ?

>
        Dave we need not to forget your countryman John Wiseman and the
G8BPQ Switch. This software uses John's own version of what he belives is
the netrom spec. He and a buddy of mine in Huntsville, AL tested his
switch at 56kb/sec and it ran just fine in a 88386-16 computer. I use it
at 1200 and 9600 and it is wonderful.

> Dave
>
> P.S. One good thing - thanks Chuck - The minimum L4 ack delay is
> 1 second. In point to point links like this, this is too long.
> I will modify the code so that a zero delay can be set if desired.
> It results in more traffic on the network but faster throughput
> (what were our definitions of 'efficiency ' ?).
>
>
        Thanks Dave for your perception of the problem and it does seem
like we need to spec both the switch type AND the host TNC or computer,
since they contribute to performance.

73, de karl k5di

>
>

77. Re: [NETSIG:967] netrom efficiency

From: tmoulton@ram.net
Date: Thu, 23 Feb 95 09:07:08 EST
To: netsig@tapr.org
Message-ID: <15021573.18fb@ram.net>
Rendered body type: text/plain

Dave,

>I then set up a test as below.
>
>NOS was used to emulate the two user TNCs and data source, by transferring
>a 4K byte file and timing from start of send to data received. PC to
>Node links were 9k6 RS232 to the RS232 ports (corresponding to the 9K6
>radio links in Chuck's tests.

You had this setup?

NOS-->X1J4-->X1J4-->NOS

and sent 4K left to right?

>I then set up the netrom parameters properly - waindow size as per
>Chuck's ROSE settings and ACK delay - significantly - to 1 second.

Which params did you change to what values?

(So we can reproduce the test)

I do not usually use greater than 9k6 or 19k2 for the async port speeds
either...

tom

78. RE: [NETSIG:970] Re: netrom efficiency

From: roberts@ses6a.bt.co.uk
Date: Thu, 23 Feb 1995 16:47:29 +0000
To: netsig@tapr.org
Message-ID: <199502231656.KAA16237@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

The L4 ACK timer and L4 window.

Dave

P.S.

There are a lot of values not specified in the tests. It would
be an idea to get a complete set of all if you want to reproduce it
exactly. What were all the other parameters set to in the

original tests ?

Shall we do this direct rather than bore everyone with a ping-pong
of messages via netsig ?

79. ROSE, Netrom, IP.....

From: "Brian A. Lantz" <brian@lantz.com>
Date: Thu, 23 Feb 1995 23:22:10 +0000
To: TAPR NETSIG Mailing List <netsig@tapr.org>
Message-ID: <Pine.3.89.9502232349.O25747-0100000@lantz.com>
Rendered body type: text/plain

Who'da ever thought we'd see the day when ROSE, Netrom, and xNOS
developers would be working together for the good of the network!?!?!?

Gosh, maybe we could also get a Republican Senate (oh yeah, we did).....

Dave, Chuck, Tom, et al..... Keep it up!

Brian A. Lantz   brian@lantz.com

REAL PORTION of Microsoft Windows code:

```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

80. Re: [NETSIG:968] Re: Radios for higher speeds

From: jra@ag9v.ampr.org
Date: Fri, 24 Feb 1995 08:21:50 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199502241321.IAA01804@ag9v.ampr.org>
Rendered body type: text/plain

I have a set of the netsig files that should include nearly every message
posted from day one. TAPR should have them, but if for some reason they're
not available, I can upload my set there.

John AG9V

You (Gary Crum) write:
>
>Hello, netsig list,
>
>It looks like there is a place to FTP old netsig mail, but it is empty!
>I mean, the directory ftp://ftp.tapr.org/tapr/SIG/netsig/mail_archive .
>Darn, I was hoping I could get familiar with what has been discussed here.
>Maybe I should try the listserv e-mail address.

81. Re: [NETSIG:973] Re: Radios for higher speeds

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 24 Feb 1995 12:23:17 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199502241823.MAA17071@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

They are not yet on ftp...but the listserv has every file. I have not had
time to get ftp script implemented yet -- broke a tooth -- teeth first --
TAPR second :-)

See instructions below.

Greg

According to jra@ag9v.ampr.org:
>
> I have a set of the netsig files that should include nearly every message
> posted from day one. TAPR should have them, but if for some reason they're
> not available, I can upload my set there.
>
> John AG9V
> ---
> You (Gary Crum) write:
> >

> >Hello, netsig list,
> >
> >It looks like there is a place to FTP old netsig mail, but it is empty!
> >I mean, the directory ftp://ftp.tapr.org/tapr/SIG/netsig/mail_archive .
> >Darn, I was hoping I could get familiar with what has been discussed here.
> >Maybe I should try the listserv e-mail address.
>

Greetings from TAPR!

TAPR can be reached via the Internet. The Automated Information Server that
TAPR provides allows anyone to request information on TAPR, products,
newsletters, and lots of other files. To find out more about this service,
send an e-mail message to listserv@tapr.org with the subject line "Request"
and the following text in the body of the message:

```
help                            (for a brief set of instructions)
index -all                      (for a list of all file by topic area)
list                            (for a list of TAPR Mail Groups)
get tapr taprinfo.txt           (or info on TAPR)
```

In the above message example, "help" retrieves a brief set of instructions
for info, "index -all" retrieves a list of available files by topic and
"taprinfo.txt" retrieves a text file containing information on TAPR and what
TAPR is all about. If you want to retrieve several text files with one
message, use a separate line for each "get filename" request.

-----

82. DAMA ?

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 24 Feb 1995 14:01:40 -0600 (CST)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199502242001.OAA00612@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Does anyone has an english translation of the DAMA specification out of
Germany ?

Greg

83. Re: [NETSIG:975] DAMA ?

From: Tim Baggett <tim@NMSU.Edu>
Date: Fri, 24 Feb 1995 16:22:40 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.3.87.9502241640.D17470-0100000@wilma>
Rendered body type: text/plain

On Fri, 24 Feb 1995, Greg Jones wrote:

> Does anyone has an english translation of the DAMA specification out of
> Germany ?
>
> Greg

Greg,

NMSU is doing some DAMA research for NASA. I'll see what I can dig up.
Anything specific?

Tim, AA5DF

New Mexico State Univesity, Las Cruces, NM
Internet: tim@nmsu.edu
AMPRnet: aa5df@armstrong.ampr.org

84. Re: [NETSIG:959] Re: Netrom function

From: WCHAST@delphi.com
Date: Fri, 24 Feb 1995 19:59:27 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HNFUDYR8FO91VYVD@delphi.com>
Rendered body type: text/plain

Yes, Mike I think that the different protocols should pass the others
transparently, that would make inter-operability of networks much better.

Just as a ROSE network will allow two geographicly separates NetRom type

networks to talk to one another, the NetRom type networks should allow
the same for ROSE, or any other protocol for that much.

Lets see what can be done. It will help a lot regardless.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---

85. Re: [NETSIG:975] DAMA ?

From: Richard.Saue@jur.uib.no (Richard Saue)
Date: Sat, 25 Feb 1995 10:45:31 +0000
To: netsig@tapr.org
Message-ID: <v01510101ab74c74e1694@[129.177.155.182]>
Rendered body type: text/plain

Hi!

Greg Jones wrote:

>Does anyone has an english translation of the DAMA specification out of
>Germany ?

Ftp the file TFX.ZIP From FTP.FUNET.FI /HAM/PACKET/MISC. In this zip file you
will find another zipfile named DAMADOC.ZIP. There you will find some
description in english language...

By the way, TFX is the new hostmode driver for baycom modem. Creator is
NORD><LINK. TFX supports DAMA....

73 de Richard

86. wormholes

From: Fred Peerenboom <peerenbf@dmapub.dma.org>
Date: Sun, 26 Feb 1995 15:11:57 -0500 (EST)
To: "netsig@tapr.org" <netsig@tapr.org>
Message-ID: <Pine.SV4.3.91.950226150628.22834B-100000@dmapub.dma.org>
Rendered body type: text/plain

anyone know of a wormhole in the eastern PA area that I could telnet to
from the inet and drop mail for a friend of mine in that area. For some
reason the packet forwarding to that area is not working. (hasn't been
for over a year now with any reliability)
Thanks,
Fred

87. Wormholes

From: Jason A Miller <miller14@odi.cwc.whecn.edu>
Date: Sun, 26 Feb 1995 14:45:57 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SCO.3.91.950226144423.16241A-100000@odi.cwc.whecn.edu>
Rendered body type: text/plain

Could someone send me a list of the Internet --> packet wormholes
available. Thank you in advance for your response.

>>> Jason A Miller, KB7YWI   miller14@odi.cwc.whecn.edu

88. Packet BUGS & QUIRKS by VE2BMQ

From: dino@cam.org (Dino Moriello)
Date: Sun, 26 Feb 1995 17:31:14 -0500
To: netsig@tapr.org
Message-ID: <v01510101ab76afe9d682@[198.168.100.145]>
Rendered body type: text/plain

The following is forwarded by Dino Moriello, VE2DM.

The BUG and QUICK Report can also be viewed using the WWW at:
http://www.cam.org/~dino/bug&quirk1.html

Any comments can also be sent to dino@cam.org or dino@ve2dm.ampr.org and
will be passed on to VE2BMQ.

_____

BUG and QUIRK Report

Edited by: Burt VE2BMQ
Updated: Feb 13, 1995

The "BUG and QUIRK Report" is a collection of known and reported problems with packet radio software and hardware used both in network and user applications. Comments and additional bug reports should be sent to VE2BMQ @ VE2FKB.#MTL.PQ.CAN.NA or to the NEDA post box (NEDA, P.O.Box 563, Manchester, NH 03105).

***Note: The high number of PacComm related bugs noted in this report does NOT in any way reflect on the manufacturer but is simply because this first report has been assemblied largely from my personal experience and I personally run mostly PacComm products. Future reports hopefully will be more balanced as problems with other manufacturers products are brought to my attention.

****

Network Applications

G8BPQ switch software - "Stuck Last Frame Syndrome" (confirmed but cause unknown) is a condition where the last frame on a circuit passing through a BPQ packet switch appears to get stuck until another frame pushes it on or until some parameter times out usually at about 3 minutes. Occurs intermittantly and has been observed on at least 3 different local servers. Usually it occurs when you are downloading a BBS list or message which flows smoothly and quickly until suddenly the flow stops. Sending a command to the BBS that would elicit a response will cause the missing final frame to appear along with the additional response.

John G8BPQ may have attempted to address the problem with version 4.06h but the problem still exists with the version 4.07a. If you often see this problem, a note to John Wiseman G8BPQ might add pressure to solve the problem. He did not respond to my report. (VE2BMQ)

PacComm Tiny-2 (original, not MK2) - The original Tiny-2s using MAX231 serial port chips have been reported to develop reduced drive problems due to drying out of the aluminum electrolytic capacitors associated with the charge pump voltage inverter. This would show up first on a large matrix with drive problems. Cure: Replace all the electrolytic capacitors around the MAX231. (NX2P)

PacComm Tiny-2 (both original and MK2) - There have been at least 2 known cases of serial port lockups on node stacks. These happen intermittantly and also clear instantly if the serial port connector is disconnected (or even slightly moved). During the lockup, all nodes on the stack will become very slow or stop completely. X1J nodes will show a very low CPU count (like less than 20) in the Stats list with the suspect TNC being the lowest. Changing the MAX231 or MAX232 has cured these cases. Cause is unknown. (VE2BMQ, VE2DJE)

TheNET X1J (both versions) - Reduced free buffer lockup problem ("Dribbling Buffers"). This problem shows as a condition where you can connect to a node but it will not allow you to connect out to another node. It will respond to the outgoing C request with a "Node Busy" error message. Looking at the Stats list will show a low (high 100s or 200s) buffer count. A "warm" reset will restore the node to normal operation without affecting any locked parameters.

When observed after a warm reset, the buffer count will drop gradually over a period of hours to weeks, and the problem will repeat when the buffers count drops below 300 or so. The fast drop cases (over hours or days) have been reported to be associated with TNCs running open squelch WITHOUT a DCD option board installed. NEDA recommends use of the DCD option board with all open squelch nodes. The DCD option board however has not cured all cases of fast buffer loss and these cases are still a mystery.

Cases of slow buffer loss are equally mysterious. I (VE2BMQ) have had 3 cases, 2 on a user port with a high CRC error rate (100-200% of heard frames) and a DCD board installed and a third on a backbone with low CRC error rate (10%) and a HAPN modem DCD to control the open squelch. All these cases have happened after more than 1600 hours (10 weeks) of operation.

Additional reports with careful observations of stats and conditions are requested in an attempt to resolve the problem.

Last Minute Note: Dave G8KBB thinks he has identified the cause. A patch is now being tested. Keep watching for results. (VE2BMQ)

TheNET X1J version 1 - BBS, DXC, and HOST commands will not accept callsigns with SSIDs greater than 9. This bug has been admitted by the author and corrected in version 2. (VE2BMQ)

TheNET X1J version 2 - Extra ALIAS feature does not work. (Verified by several independant node-ops). In this case a connect request to the extra BBS, DXC or HOST ALIAS (without first connecting to the node) will fail due to an error in the program. We are still waiting for a correction to this problem. (VE2BMQ)

****

User Hardware/Software Problems

KISS original KA9Q version - The original version of KISS mode still supplied with most TNCs has a serious shortcoming that affects operation on congested channels. The TNC running this original KISS mode firmware CANNOT tell the computer whether it has been able to transmit the frames it has in its outgoing buffer. The result is that the computer will often dump multiple copies of the same frame which are then sent in one long packet transmission.

Some TNCs do have advanced versions of KISS that allow better handshaking with the computer. If they are available and your application will support them, use them. Unfortunately the normal versions of NOS and other TCP programs require the original KISS to operate. Do do your fellow packeteers a favor and restrict use of the original KISS to low usage or dedicated TCP channels. For network users running BPQ switches with KISS, please switch to the use of BPQKISS MODE which will avoid the above problems.
PacComm (Most TNCs) Firmware 1.1.6D4 - This version of TNC firmware which was distributed between 1990 and 1993 had a defective KISS module. The KISS mode acted as if it was full duplex and would transmit on top of other signals. If you have this version of firmware in your TNC , PLEASE for the sake of other users on the channel do NOT run KISS mode. Cure: Replace EPROM with a newer firmware version. (VE2BMQ)

PacComm Tiny-2 (and possibly other TNCs) Firmware PMS 3.1 - This version of PacComm's firmware had a problem where under some circumstances, it would not acknowledge a data frame until it had another data frame of its own to send or was polled by the other end. This gave the appearance of a response time = infinity. It appears to happen only when certain makes of TNCs (or certain versions of firmware) are connected to each other. At other times it works normally. The manufacturer has acknowledged this problem and it has been corrected with firmware version PMS 3.2 . (VE2BMQ)

PacComm Tiny-2 (and possibly other TNCs) Firmware PMS 3.2 and 3.2b - (Noted recently but not yet confirmed by others) This current version (as of Dec 1/94) of PacComm's firmware appears to have a serious fault in the retry timing procedure. The problem is that neither the preferred P-Persistance nor the T-Persistance method of retry timing work. You can check for yourself by turning on PPersistance and entering extreme values for persistance and slottime. The retry pattern of the TNC does not change. So far no comment has been received from the manufacturer. (VE2BMQ)

PacComm Tiny-2 Firmware PMS 3.2b - In addition to the no Persistance problem, in this version the MHC (heard list clear) command does not work. (VE2BMQ)

PacComm Tiny-2 Firmware PMS 3.2.9.1 - Still has the no persistance problem but has fixed the MHC (heard list clear) command from the previous version. (VE2BMQ)

[Dino Moriello : dino@cam.org or moriello@rouyn-ogc.hydro.qc.ca   ]
[VE2DM@VE2FKB : WWW Page: Updte:950223 http://www.cam.org/~dino/   ]
["To boldly go where no one has gone before" - Star Trek   ]

89. New WWW page for "Linux for Hams" project

From: bruce@pixar.com (Bruce Perens)
Date: Sun, 26 Feb 95 22:05 PST
To: netsig@tapr.org
Message-ID: <m0riyZw-0006VhC@mongo.pixar.com>
Rendered body type: text/plain

I've established a WWW page for my project to create a "Linux for Hams"
distribution. Please add this anchor to your Amateur Radio WWW pages:

        Linux For Hams

For those of you who don't read HTML, have your WWW browser open this URL:

        http://www.rahul.net/perens/LinuxForHams

        Thanks

        Bruce Perens AB6YM
--
Bruce Perens AB6YM
Voice phone: 510-215-3502 Internet: Bruce@Pixar.com
Amateur Radio: Bruce@ab6ym.ampr.org ab6ym@n0ary.#nocal.ca.usa.noam

90. Mail Archives available on ftp.tapr.org

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 27 Feb 1995 00:37:43 -0600 (CST)
To: netsig@tapr.org (NETSIG mailing), bbssig@tapr.org (BBS SIG mailing),
        aprssig@tapr.org, hfsig@tapr.org (HF SIG mailing)
Message-ID: <199502270637.AAA15814@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Mail Archives for the various mail groups are now available on both
listserv@tapr.org and via ftp.tapr.org

The mail archives on the listserv is updated daily.
The mail archives in the ftp area is updated weekly.

91. RE: [NETSIG:975] DAMA ?

From: roberts@ses6a.bt.co.uk
Date: Mon, 27 Feb 1995 11:44:00 +0000
To: netsig@tapr.org
Message-ID: <199502271358.HAA13144@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

If they do, I'd like a copy too.

I do have a description but it is not precise enought to implement from

Dave

92. RE: [NETSIG:971] Re: netrom efficiency (fwd)

From: roberts@ses6a.bt.co.uk
Date: Mon, 27 Feb 1995 12:35:32 +0000
To: netsig@tapr.org
Message-ID: <199502271526.JAA14063@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Hi Bill,

The defaults sent out with the code are as per the original NORD<>LINK.

When the node sends out a frame, it starts a timer going in the destination
node. When this timer reaches zero, it will ACK the current highest in-
sequence frame received. Any other frames received during this time
result in reinitialising the timer. The idea is that after receiving a
burst of frames (assuming the traffic looks like that) then it
will wait until the timer reaches zero and ACK them all in one frame.

If you have it set to 6 seconds, then it will introduce a 6 second
delay every 4 frames.

If you set it too short, then it will issue ACKs when it does not
need to, resulting in apparent faster response at the expense of
some extra network traffic.

The correct setting depends on the network. If you have a 9600
backbone then yes, it should be shorter !.

Dave

93. Re: [NETSIG:981] NETSIG digest 138

From: Dirk-Jan Koopman <djk@dirku.demon.co.uk>
Date: Mon, 27 Feb 1995 08:22:23 +0100 (GMT)

To: netsig@tapr.org
Cc: mike@thorcom.demon.co.uk
Message-ID: <199502270822.IAA08078@dirku.demon.co.uk>
Rendered body type: text/plain

> Network Applications
>
> G8BPQ switch software - "Stuck Last Frame Syndrome" (confirmed but cause
> unknown) is a condition where the last frame on a circuit passing through a
> BPQ packet switch appears to get stuck until another frame pushes it on or
> until some parameter times out usually at about 3 minutes. Occurs
> intermittantly and has been observed on at least 3 different local servers.
> Usually it occurs when you are downloading a BBS list or message which
> flows smoothly and quickly until suddenly the flow stops. Sending a
> command to the BBS that would elicit a response will cause the missing
> final frame to appear along with the additional response.
>
> John G8BPQ may have attempted to address the problem with version 4.06h but
> the problem still exists with the version 4.07a. If you often see this
> problem, a note to John Wiseman G8BPQ might add pressure to solve the
> problem. He did not respond to my report. (VE2BMQ)

I will bring this to his attention

>
> KISS original KA9Q version - The original version of KISS mode still
> supplied with most TNCs has a serious shortcoming that affects operation on
> congested channels. The TNC running this original KISS mode firmware
> CANNOT tell the computer whether it has been able to transmit the frames it
> has in its outgoing buffer. The result is that the computer will often
> dump multiple copies of the same frame which are then sent in one long
> packet transmission.
>

This isn't (AFAIK) a bug, it is a feature. Phil Karn actually wanted it
this way. Keep it Simple Stupid means just that - adding handshaking
meant more complication and portability problems. It was, after all,
designed to be a definitive solution for packet radio and the question
of whether or not to run on dedicated IP channels wouldn't arise because
it would sweep all before it as we switched over to exclusive (or even
extensive) running of IP on air ..... [;-)]

--
Dirk-Jan Koopman   Tel/Fax: +44 1362 696076 Mobile: +44 973 333806
Computer Consultant   Email: djk@dirku.demon.co.uk or G1TLH@GB7TLH.#35.GBR.EU
"We are actually strong believers in the therapeutic qualities of
oddity. It provides a little bit of sanity in the world" - The Bookseller

94. Re: [NETSIG:970] Re: netrom efficiency

From: tmoulton@ram.net
Date: Mon, 27 Feb 95 10:59:33 EST
To: netsig@tapr.org
Message-ID: <15021573.1920@ram.net>
Rendered body type: text/plain

>From: netsig@tapr.org (netsig (tapr))
>Date: Thu, 23 Feb 1995 10:01:27 -0600
>Message-Id: <15021573.18fb@ram.net>
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>Subject: [NETSIG:970] Re: netrom efficiency
>
>Dave,
>
>
>>I then set up a test as below.
>>
>>NOS was used to emulate the two user TNCs and data source, by transferring
>>a 4K byte file and timing from start of send to data received. PC to
>>Node links were 9k6 RS232 to the RS232 ports (corresponding to the 9K6
>>radio links in Chuck's tests.
>
>You had this setup?
>
>NOS-->X1J4-->X1J4-->NOS
>
>and sent 4K left to right?
>

Did I miss the answer to this question?

tom

95. Kantronics KPC-9612, KISS mode, JNOS

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Mon, 27 Feb 95 16:57:50 -0700
To: tcp-group@ucsd.edu, netsig@tapr.org, faster@ve7frg.ampr.org,
uurc@uugate.wa7slg.ampr.org
Message-ID: <9502272357.AA01255@n.kb7eec.ampr.org>
Rendered body type: text/plain

[Note Reply-To: kb7eec@uugate.ampr.org line in message header.]

Last night I hooked up a Kantronics KPC-9612 "Packet Communicator" to a Radio Shack HTX-404 radio. I had to solder TX, RX, PTT and GND lines inside the radio to get 9600bps working (on 431.75MHz here in the Salt Lake valley). Thanks to Clint Turner, ka7oei@uugate.ampr.org, for suggesting a TX audio insertion point on the HTX-404 RF schematic diagram. This puts the cost of a 9600bps-capable controller ($200) and frequency synthesized radio ($230) at $430 total.

But, I then put the controller in KISS mode, started up JNOS, and realized that I have no way to specify that JNOS transmit out the 9600bps "port". It merely transmits out the KPC-9612 Port 1, the 1200bps port. Does anyone know how to do this? I wonder if I'll have to look into the G8BPQ Extended KISS protocol as also supported by the KPC-9612.

I am not referring to computer COM ports; The KPC-9612 has both 9600bps and 1200bps modems, and they can be active at the same time. At the cmd: prompt, the "~" and "|" commands are used to select radio ports 1 (1200bps) or 2 (9600bps). I presume there must be some way for a program that uses KISS mode to specify which port, but I don't know how that is done yet. I thought I'd send mail to these mailing lists and see what others have done.

I haven't tried contacting Kantronics yet; The manual gives a fax number and mailing address but no e-mail address or technical support telephone number. Can anyone recommend a good way to communicate with Kantronics?

By the way, neither the HTX-404 nor the Standard C5718DA seems to be fast enough for the 70ms TX Delay that is commonly used with G3RUH 9600bps, but they both work when I set TXD to around 300ms (the setting typically used for 1200bps).

Gary

96. Re: Kantronics KPC-9612, KISS mode, JNOS

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Mon, 27 Feb 95 19:49:13 -0700
To: "Milton D. Miller II" <miltonm@bga.com>
Cc: tcp-group@ucsd.edu, netsig@tapr.org, faster@ve7frg.ampr.org,
uurc@uugate.wa7slg.ampr.org
Message-ID: <9502280249.AA01320@n.kb7eec.ampr.org>
Rendered body type: text/plain

Yes, that's it, I'll bet. I just barely found out about "attach kiss" (as opposed to "attach ax25") from looking at JNOS source code and documentation, just before I got your message. Now I just need to recompile JNOS with the KISS symbol defined.

In reply to:

>From miltonm@bga.com Mon Feb 27 19:37:56 1995
Date: Mon, 27 Feb 1995 20:45:49 -0600
From: "Milton D. Miller II" <miltonm@bga.com>
To: crum@n.kb7eec.ampr.org, kb7eec@uugate.wa7slg.ampr.org
Subject: Re: Kantronics KPC-9612, KISS mode, JNOS

My guess would be to attach a secondary kiss port (kiss channel 1)
usingn "attach kiss ..." after you attach the first part. There
may also be a command to change the default port, I don't have
a manual.

milton
--
Milton Miller KB5TKF miltonm@bga.com

97. Re: [NETSIG:987] Re: netrom efficiency

From: tmoulton@ram.net
Date: Tue, 28 Feb 95 06:34:11 EST
To: netsig@tapr.org
Message-ID: <15021573.1927@ram.net>
Rendered body type: text/plain

Subject: [NETSIG:987] Re: netrom efficiency
>Subject: [NETSIG:970] Re: netrom efficiency
>
>Dave,
>
>
>>I then set up a test as below.
>>
>>NOS was used to emulate the two user TNCs and data source, by transferring
>>a 4K byte file and timing from start of send to data received. PC to
>>Node links were 9k6 RS232 to the RS232 ports (corresponding to the 9K6
>>radio links in Chuck's tests.
>
>You had this setup?
>
>NOS-->X1J4-->X1J4-->NOS
>
>and sent 4K left to right?
>

Did I miss the answer to this question?

tom

From: roberts@ses6a.bt.co.uk
To: tmoulton@ram.net
Subject: RE: [NETSIG:987] Re: netrom efficiency
Date: Tue, 28 Feb 1995 08:28:08 +0000
Reply-To: roberts@ses6a.bt.co.uk

yes Tom.

4K xfer

Dave

Dave, I think your test was not valid.

The test that Chuck KP4DJT and Don N2IRZ ram were sending AND receiving 4k.

When your new version comes out (you mentioned making some changes due to the
test results) I can get them, and maybe others to perform the tests again,
using the same setup as before.

I am sorry to belabor the point here, but I think the test they ran is vaild.

They were using the parameters that were being used in real networks for both
cases. If they were not set up 100% right then they have a lot of eproms to
burn...

tom

98. Re: [NETSIG:987] Re: netrom efficiency

From: tmoulton@ram.net
Date: Tue, 28 Feb 95 06:41:30 EST
To: netsig@tapr.org
Message-ID: <15021573.1928@ram.net>
Rendered body type: text/plain

In a long haul network the Level 4 window will restrict the throughput of a
netrom connection because of the timers and window rotations.

The bad part is that some applications have no need for a transport layer, or
they have a simpler transport based upon streaming data (ie no real window)

In most communications models the only transport that should be used is in
the end point devices (ie user's application).

ROSE has no builtin transport and I think that technically the maximum
attainable throughput will be acheved by ROSE, unless you totally disable the
Transport in netrom.

tom

99. RE: [NETSIG:990] Re: netrom efficiency

From: roberts@ses6a.bt.co.uk
Date: Tue, 28 Feb 1995 18:35:34 +0000
To: netsig@tapr.org
Message-ID: <199502281837.MAA07880@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sorry Tom, but you really don't seem to understand.

On the 38Kbaud link, which was the link that carried the data
in Chuck's test in Netrom encapsulation, 4 Kbytes of data goes
real fast. What slows it down are the TIMERS (yes, T I M E R S)
that introduce delays. Sending data back again does not double the time
as the data piggy-backs on the return frames, if you set it up
correctly. If you wish to drip feed information about the tests then
fine, but it is beginning to get a bit tedious, or do I assume that
this information is as inaccurate as your earlier statement that this
was NOT a netrom test but a 'plain ole AX.25 F0 test', or
'a closed network environment (copper)'.

Equally significant is the statement that the data was
supposed to emulate BBS traffic. Do I therefore assume that the
data is echoed back in a 4K block ?. Is it a byte at a time ? Is it
a line at a time. What about all the other settings ?. No, don't
bother to collate them. See the comments a bit later on instead.

Also there is no right setting. For each network the networks
achieve different purposes and have different demands. There is
no 'one' answer. BTW - I assume from your comment about burning
EPROMS that you are unaware that ALL parameters apart from the
node callsign are remotely configurable and held in RAM in TheNet.
Sorry - I am now beginning to indulge in practices that I find
unacceptable.

As I have been patiently saying - what we lack are a decent set
of repeatable tests that actually show useful things. The phrase
'flogging a dead horse' comes to mind at the moment.

Please, no flame, no high ground wars.

I apologise to those who emailed me saying 'keep calm'. I'd
prefer just to stop wasting time on this issue and get back
to development.

Shall we draw a line at this point then ?. Have one last email
Tom, and I'll not respond to it and let it die.

Let's actually try to look at the NEXT generation systems shall we ?
That's why I joined this group and what I'd like to contribute if
there are willing participants.

If we are going to spend our time defending todays technology, we
will never get around to tomorrow's. Anyone else dug out a copy of the
ITU IN standards yet ?. What are the set of triggers we should define
in a switch ?. How should a switch (be it TheNet, ROSE, BPQ or
whatever) communicate with the intelligence layer ?. What should
constitute the intelligence layer and SCP functinality. What are
the actual requirements. Are there any ?

Dave.

100. Re: [NETSIG:992] Re: netrom efficiency

From: joconno@Gateway.Uswnvg.COM (James O'Connor)
Date: Tue, 28 Feb 1995 10:59:37 -0800 (PST)
To: netsig@tapr.org
Message-ID: <9502281859.AA03224@nv2.uswnvg.com>
Rendered body type: text/plain

>
> Let's actually try to look at the NEXT generation systems shall we ?
> That's why I joined this group and what I'd like to contribute if
> there are willing participants.
>
> If we are going to spend our time defending todays technology, we
> will never get around to tomorrow's. Anyone else dug out a copy of the
> ITU IN standards yet ?. What are the set of triggers we should define

> in a switch ?. How should a switch (be it TheNet, ROSE, BPQ or
> whatever) communicate with the intelligence layer ?. What should
> constitute the intelligence layer and SCP functinality. What are
> the actual requirements. Are there any ?
>
> Dave.
>
AMEN. Can we move on?

jim wb0phv

101. RE: [NETSIG:989] NETSIG digest 139

From: "Thomas Jim" <thomas_jim@macmail2.cig.mot.com>
Date: 28 Feb 1995 13:00:16 -0500
To: netsig@tapr.org
Message-ID: <199502281902.AA14169@pobox.mot.com>
Rendered body type: text/plain

On the kpc9612 operation:
Yes. Use "attach KISS" to use the second port (9600) of the kpc9612 after the first port is attached using "attach asy".
There is a command in the kpc9612 for it to default to the 9600 port as its first port for ax25 use, but I have never tried this and then used KISS yet.
We have 9600 bps operation on kpc9612 tncs in use here in the Chicago area on Motorola UHF Sabre, Motorola Mitrek 2m, Motorola Mitrek UHF, and TEKK UHF.
I have modified several 55 watt Motorola 430 Mhz Mitreks myself and am about to swap them with the 2 watt Tekk radios we were using as well as a Kantronics 10 watt D410 I had on my PackeTen node. UHF 9600 operation seems to be more critical of signal strength than the 2m 1200 bps operation and so we need the higher power and better specs of the modified Mitreks. The D410 UHF radios also seemed to be to wide of a receive and not to be able to reject nearby frequencies.

102. Network Efficiency

From: tmoulton@ram.net
Date: Tue, 28 Feb 95 14:35:10 EST
To: netsig@tapr.org
Message-ID: <15021573.1930@ram.net>
Rendered body type: text/plain

Ok,

Let's define a list of metrics that each Networking Solution can be evaluated on and use that as a starting point.

Jim wb0phv

Would you be willing to collect the list of metrics you receive via email and repost them in summary form?

The method for some will be obvious, but others will require discussion of how to measure or test them. Break them out one at a time and we'll generate a test plan to be used to evaluate existing and any new Networking Solutions.

Please provide a prefered email address for the suggestions.

tom

103. Re: [NETSIG:992] Re: netrom efficiency

From: Klarsen <k5di@acca.nmsu.edu>
Date: Tue, 28 Feb 1995 14:06:56 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950228135902.14388D-100000@acca>
Rendered body type: text/plain

Dave, I think all things considered that we need to talk about the here and now a bit more. You say there is a timer that should be set for conditions. I for one would like to hear more about settings of TheNet and X1j nodes for conditions of 1200 and 9600 baud, simplex and duplex, stacked 3 or more, and under slow keyboard or bbs and DXcluster forwarding.

I sysop 3 nodes and must claim a rather large case of ignorance about some of the parameters we can mis-adjust...:-) So a paper on how to TEST and DETERMINE when a node is functioning well would be a "best seller" around here.

73, de karl k5di

104. Re: netrom efficiency

From: jkbe@aluxs.att.com (John Bednar)
Date: Tue, 28 Feb 95 17:46:39 EST
To: netsig@tapr.org
Message-ID: <9502282246.AA02467@lena>
Rendered body type: text/plain

I am familiar with NEDA suggested node parameters. They are
tailored for a 1200 baud network where users receive data in
single frame (236 byte) dribbles. This lowers the efficiency
of the user and backbone ports in an effort to allow
more users on the network. NEDA at this time, does not recognize
the need for alternate parameters on 9600/19.2 kbps user/backbone
ports. If NEDA parameters were used in the X1J nodes for a
flat-out 9600 bps efficiency test, it was an error.

It's possible that Rose has some efficiency advantage over X1J
however, I believe it may have been overstated in the test data.
I'm sure Dave is concerned at the 3X, 4X time differences and not
the potential 5% difference.

Thanks to both Tom and Dave for their efforts over the years.
It's appreciated by many.

John, WB3ESS

March 1995

Original source file: netsig.9503
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9503

1. Re: [NETSIG:996] Re: netrom efficiency

From: Douglas Fajardo <dfajardo@netcom.com>
Date: Wed, 1 Mar 1995 00:27:16 -0800 (PST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9503010004.A3886-0100000@netcom23>
Rendered body type: text/plain

On Tue, 28 Feb 1995, Klarsen wrote:

> I for one would like to hear more about settings of
> TheNet and X1j nodes for conditions of 1200 and 9600 baud, simplex and
> duplex, stacked 3 or more, and under slow keyboard or bbs and DXcluster
> forwarding.
>
>   I sysop 3 nodes and must claim a rather large case of ignorance
> about some of the parameters we can mis-adjust...:-) So a paper on how
> to TEST and DETERMINE when a node is functioning well would be a "best
> seller" around here.
>
> 73, de karl k5di
        I'm with Karl here 100% - I'd like to see that paper also!

**** Doug, WB6KNY

---

2. the future

From: roberts@ses6a.bt.co.uk
Date: Wed, 1 Mar 1995 09:10:02 +0000
To: netsig@tapr.org
Message-ID: <199503010912.DAA15751@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

I'll see what I can do on the configuration side.

It is an issue that the packet world has never really sorted out,
even for L1 parameters !.

On the standards side, I believe you can get at ITU documents on

        gopher://info.itu.ch/11/.1/ITU
                                   /TIES
                                   /ITUinfo
                          .ch:3000/7

but on trying it a few seconds ago, I got DNS lookup errors. This
may well be a local problem here - I then tried to get at internic
and failed that too !

Basically, an IN splits switching from intelligence, Consider first
the telecomms INs.

A switch, if given a simple task such as routing a geographic number
such as +44 1473 682266 would just route it according to its tables.
If given something a bit more complex however, such as an 800 or 900
number, it would ask the intelligence layer to translate it into some
routing info it can deal with. This allows the building of services
such as personal numbering and mobility.

The switch needs to know the triggers on which to refer to the intelligence
layer (as opposed to just deal with it locally) and it needs a way
of communicating with its local intelligence functions (called the SCP
in IN parlance). The switch is referred to as the SSP (plus a few
other names).

The intelligence layer is the one you then develop to build exotic
services whilst keeping the switches simple, lean and efficient.

Switched data services are supported in similar ways.

We are beginning to see 56 (US) and 64 K bit (EU) links emerging.
We are beginning to see 2 Mbit backbones. In a few years time these
may be the norm. If it takes 5 years, say, then in 5 years time we
would need to be able to deploy these type of swiching systems. By then
most people will be used to them in the phone systems. Lets step

back over those 5 years. Say 1 year initial trials, a couple of years
for development, a year for definition of standards that leaves this
year to investigate the feasibility and desirability. And I believe
these timescales are unrealistically optimistic.

An IN does not mean you scrap your switches. What it means is that
you make small changes to the switches to allow them to
communicate with the intelligence layer.

How about it. Is it time for another revolution - as hard again as
all we have achieved so far ?.

Dave.

3. ITU

From: roberts@ses6a.bt.co.uk
Date: Wed, 1 Mar 1995 09:30:05 +0000
To: netsig@tapr.org
Message-ID: <199503010932.DAA15939@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Found it.

Try gopher://info.itu.ch/11/

Dave

4. Re: [NETSIG:997] Re: netrom efficiency

From: tmoulton@ram.net
Date: Wed, 01 Mar 95 06:20:44 EST
To: netsig@tapr.org
Message-ID: <15021573.1934@ram.net>
Rendered body type: text/plain

>I am familiar with NEDA suggested node parameters. They are
>tailored for a 1200 baud network where users receive data in
>single frame (236 byte) dribbles. This lowers the efficiency
>of the user and backbone ports in an effort to allow
>more users on the network. NEDA at this time, does not recognize
>the need for alternate parameters on 9600/19.2 kbps user/backbone
>ports. If NEDA parameters were used in the X1J nodes for a
>flat-out 9600 bps efficiency test, it was an error.
>
>It's possible that Rose has some efficiency advantage over X1J
>however, I believe it may have been overstated in the test data.
>I'm sure Dave is concerned at the 3X, 4X time differences and not
>the potential 5% difference.
>
>Thanks to both Tom and Dave for their efforts over the years.
>It's appreciated by many.
>
>John, WB3ESS

The tests were run by both N2IRZ using NEDA parsm and KP4DJT with help from
Paul Evans (an Englishman and friend of Dave's - who from my own
conversations with him is very familular with NetRom) to make it move the
data as fast as they could.

With the change Dave put in to reduce the L4 Ack timer the results went from
2X to the 5% (or whatever).

These tests were not done by people who didn't think they knew what they were
doing...

tom

5. Re: [NETSIG:992] Re: netrom efficiency

From: tmoulton@ram.net
Date: Wed, 01 Mar 95 09:10:21 EST
To: netsig@tapr.org
Message-ID: <15021573.193b@ram.net>
Rendered body type: text/plain

I sent this once, but it seems to have gotten lost. this is a resend,
I do this because some of the points might be important...

Dave,

I am not trying to piss anyone off, i am trying to make sure the tests are
the same.

>that introduce delays. Sending data back again does not double the time
>as the data piggy-backs on the return frames, if you set it up

But it does add an extra time for the last frames of data to be sent back.

>correctly. If you wish to drip feed information about the tests then
>fine, but it is beginning to get a bit tedious, or do I assume that

All the information about the test should be in Chuck's paper.

as far as assuming... you mis-remembered what i said

>this information is as inaccurate as your earlier statement that this
>was NOT a netrom test but a 'plain ole AX.25 F0 test', or
>'a closed network environment (copper)'.

i was talking to Karl mentioning that the test was not IP via x1j like he
first thought...

>
>Equally significant is the statement that the data was
>supposed to emulate BBS traffic. Do I therefore assume that the
>data is echoed back in a 4K block ?. Is it a byte at a time ? Is it
>a line at a time. What about all the other settings ?. No, don't

why don't i send you the PINGPONG program so you can try it yourself?
if you want to compare apples to apples.

>no 'one' answer. BTW - I assume from your comment about burning
>EPROMS that you are unaware that ALL parameters apart from the
>node callsign are remotely configurable and held in RAM in TheNet.
>Sorry - I am now beginning to indulge in practices that I find
>unacceptable.

I stand corrected.
>

>Shall we draw a line at this point then ?. Have one last email
>Tom, and I'll not respond to it and let it die.

too bad, now that you want to give me more than 2-3 word replies it could
be productive....

>
>Let's actually try to look at the NEXT generation systems shall we ?
>That's why I joined this group and what I'd like to contribute if
>there are willing participants.

Sure how about networking systems that can have 1000+ nodes in the network
that can establish network level connects to any other node?

While a Z80 may not have the RAM space to maintain 100's of connections, the
networking solutions we continue our development on should not restrict the
size and scope of the network.

Networking based upon X.25 can support global networks, IN as well.

tom

6. Re: [NETSIG:995] Network Efficiency

From: tmoulton@ram.net
Date: Wed, 01 Mar 95 09:19:00 EST
To: netsig@tapr.org
Message-ID: <15021573.193c@ram.net>
Rendered body type: text/plain

>From: netsig@tapr.org (netsig (tapr))
>Date: Tue, 28 Feb 1995 13:46:27 -0600
>Message-Id: <15021573.1930@ram.net>
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>Subject: [NETSIG:995] Network Efficiency
>
>Ok,

>
>Let's define a list of metrics that each Networking Solution can be evaluate
>d
>on and use that as a starting point.
>
>Jim wb0phv
>
>Would you be willing to collect the list of metrics you receive via email an
>d
>repost them in summary form?
>
>The method for some will be obvious, but others will require discussion of
>how to measure or test them. Break them out one at a time and we'll generate
>
>a test plan to be used to evaluate existing and any new Networking Solutions
>.
>
>Please provide a prefered email address for the suggestions.
>
>tom

Is Jim or anyone else interested in compiling a list of suggested metrics?

I would be happy to do it, if there are no takers, but people are interested
in creating a Test Plan to evaluate Networks.

tom

7. RE: [NETSIG:1002] Re: netrom efficiency

From: roberts@ses6a.bt.co.uk
Date: Wed, 1 Mar 1995 16:11:57 +0000
To: netsig@tapr.org
Message-ID: <199503011614.KAA18169@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Tom, the whole of this note is for you
Others, the useful bit is the IN bit at the end.

Agreed about the last frame sent - but the time taken is insignificant
for that.

It would be nice if the paper did include all data but it does not.
The tests need to be specified much more accurately. That is what
angered me - the drip drip of information with misinformation.
I'd be grateful if you would specify your tests completely as
the one specified is incomplete. There is also no evidence of the
parameters used, as they are missing, it is now hearsay assumed
to be correct. It is also hard to repeat given the equipment used.
I would suggest redesigning the tests as I offered to do but my
available time is short and we seem to want to keep flogging the
same horse with our limited effort instead.

On mis-remembering, you stated that it was 'plain ole AX.25 (PID F0)'.
This was not correct. Cost me an evening of thinking until I realised
what was going on.
You stated that it was plain copper.
This was not correct either.

The number of stations supported by the systems is irrelevant, for
example AX.25 with IP routing can support an unlimited number of
destinations without any problems for the poor old Z80. Indeed, with
the sub-net designs now going on in the US and UK, the routing tables
are really very simple for each such IP router. More significant is
the need for speed. An IP router with X1J will work to 38Kbaud (just)
and a bit faster in the newer fast TNCs, but we need to start to evolve
switching systems for speeds orders of magnitude faster. I see the
current technology as a fun thing to support as long as it is used but
it is, in the long run, a dead end (ROSE, Net/Rom, TexNet, FlexNet etc).
I now feel I understand comments by people like Phil Karn about seeing
an end to amateur radio (including packet). Evolve or die - and we
are not talking incrementalism here.

I fear that you fail to appreciate what I was suggesting in INs.
Yes, we could build pretty boring X.25 networks that shovel data around.
That is not the point about an IN. An IN provides a platform for
new services and uses dumb switches like ROSE, TheNet etc as its bearer
networks. No-one has even tried to think about the type of applications
we might care to support. I'd like to be able to switch on my radio

when I'm abroad, and pick up my voice mail and the results of intelligent
agent searches of the amateur network for information. I'd like to be able
to run realtime applications to monitor and feedback on radio link
experiments. Can I point the dish approximately right and have the IN
application manage the fine pointing of it for me from the top of the
mountain whilst giving me feedback on BER. Can I make use of network
based servers for pulling signals out of the noise ?. Can I run
propogation experiments by asking switches across the world to feed
back in real time signal strength information to me. I dunno what -
I'm constrained by incrementalism too - lets have a think shall we ?

Again, anyone interested ?

8. Re: [NETSIG:999] the future

From: tmoulton@ram.net
Date: Wed, 01 Mar 95 11:13:20 EST
To: netsig@tapr.org
Message-ID: <15021573.193f@ram.net>
Rendered body type: text/plain

```
>On the standards side, I believe you can get at ITU documents on
>
>   gopher://info.itu.ch/11/.1/ITU
>                                  /TIES
>                                  /ITUinfo
>                         .ch:3000/7
>
```

Also telnet to

info.itu.ch and use gopher as username

Dave,

Which ITU specs are you referring to?

tom

9. Re: [NETSIG:1004] Re: netrom efficiency

From: tmoulton@ram.net
Date: Wed, 01 Mar 95 11:56:56 EST
To: netsig@tapr.org
Message-ID: <15021573.1940@ram.net>
Rendered body type: text/plain

```
>It would be nice if the paper did include all data but it does not.
```

They specified all the ROSE parms, I don't know what X1J parms
were used. Ask Paul when you talk to him, he helped Chuck do his test.
Don's test used the NEDA set, I can dig them up if you don't have them.

Which parameters are missing? All the L1 and L2 parms are listed.

```
>On mis-remembering, you stated that it was 'plain ole AX.25 ( PID F0 )'.
>This was not correct. Cost me an evening of thinking until I realised
```

AX25L2 (PID F0) going INTO each system (ie NO IP) - Fact

```
>what was going on.
>You stated that it was plain copper.
>This was not correct either.
```

COPPER NO RADIOS - FACT (with TXDelays as if they were radio)

```
>
```

```
>The number of stations supported by the systems is irrelevant, for
```

I was talking about number of Network Nodes, not user stations.

A networking solution *MUST* be able to provide connections on a global
basis.

I do not think that ROSE is going into a dead end.

ROSE takes the radio enviroment and provides a fully transparent pipe to move
data anywhere in the world via Simple AX25 addressing.

You can take this pipe and pump any data you want (Any PID as well).

I am very interested in providing additiona functionality within ROSE to
provide IN services.

I think the point you are missing is that IN services are simply Applications
that are attached to the network, some of them require support from the
network layer, but most do not.

tom

10. Re: [NETSIG:995] Network Efficiency

From: joconno@Gateway.Uswnvg.COM (James O'Connor)
Date: Wed, 1 Mar 1995 09:00:25 -0800 (PST)
To: netsig@tapr.org
Message-ID: <9503011700.AA07048@nv2.uswnvg.com>
Rendered body type: text/plain

Tom,

You said:

>
> Ok,
>
> Let's define a list of metrics that each Networking Solution can be evaluated
> on and use that as a starting point.
>
> Jim wb0phv
>
> Would you be willing to collect the list of metrics you receive via email and
> repost them in summary form?
>
> The method for some will be obvious, but others will require discussion of
> how to measure or test them. Break them out one at a time and we'll generate
> a test plan to be used to evaluate existing and any new Networking Solutions.
>
> Please provide a prefered email address for the suggestions.
>
> tom
>i

I think it could be quite valuable to have a standard test setup over
which the different protocols could be compared, to see how they perform
in different environments with "real traffic" over "real channels" or
simulated channel impairments. I don't possess the skill set to be able
to make any judgements about what would constitute valid metrics, so
some of the people more involved in the actual code development work
would be a better choice.

I will comment though on the idea that we shouldn't use raw throughput
as the only, or the most important, characteristic of a networking
protocol to consider. I think that other important characteristics
include:
- portability
- ability to interwork with commercial networks and protocols
- support for application layer development
- ability to handle diverse transport layer media (wired, wireless)

I'm not saying that efficiency and throughput considerations should be
thrown out the window, as they must be considered as well as the other
important characteristics of protocal suite.

jim wb0phv

joconno@gateway.uswnvg.com

11. Re: [NETSIG:1000] ITU

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 1 Mar 1995 11:04:04 -0700 (MST)
To: roberts@ses6a.bt.co.uk
Cc: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950301110243.24411B-100000@acca>
Rendered body type: text/plain

On Wed, 1 Mar 1995 roberts@ses6a.bt.co.uk wrote:

> Found it.
>
> Try gopher://info.itu.ch/11/

>
> Dave
>
>
        Dave, my gopher here in NM,USA said the above address is not
correct. Any other ideas?

-karl k5di

12. Re: [NETSIG:1006] Re: netrom efficiency

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 1 Mar 1995 11:26:08 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950301112138.24411C-100000@acca>
Rendered body type: text/plain

On Wed, 1 Mar 1995 tmoulton@ram.net wrote:

> >It would be nice if the paper did include all data but it does not.
> I am very interested in providing additiona functionality within ROSE to
> provide IN services.

        Hate to admitt but I have, after several messages today no idea
what IN is.

>
> I think the point you are missing is that IN services are simply Applications
> that are attached to the network, some of them require support from the
> network layer, but most do not.
>
        The above doesn't help me either. I write this because over the
years, if I don't know what your talking about, there are lots of others
having the same problem.

        Someone please tell me what a "IN" is?

> tom
>
-karl k5di

13. Re: [NETSIG:1009] Re: netrom efficiency

From: tmoulton@ram.net
Date: Wed, 01 Mar 95 15:12:49 EST
To: netsig@tapr.org
Message-ID: <15021573.1943@ram.net>
Rendered body type: text/plain

>
>   Hate to admitt but I have, after several messages today no idea
>what IN is.
>

karl, don't feel bad, it took me until Dave's message [NETSIG:999] to see
what IN is.

IN = Intelligent Network layer

It is a set of Network Based applications to provide extra services to users.

One commonly known one is (800) service mapped to your home phone,

Basically the Network will under some specific conditions it will send a
request to the "Intelligence Layer" to see if additional actions should be
taken on behalf of the user, network, administration, any or all of the
above.

That is as much a I have figured out...

I am still interested in which specs are of specific interest.

The work is being done by ITU Study Group 11.

tom

14. March Topic of the Month: Media Access Control

From: jra@ag9v.ampr.org
Date: Thu, 2 Mar 1995 08:12:10 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199503021312.IAA03829@ag9v.ampr.org>
Rendered body type: text/plain

Steve, N7HPR, suggested a topic for general discussion on NetSIG this month, and he's agreed to be the discussion leader for this topic (thanks, Steve!).

Here's his introductory message to get things started:

****

Media Access Protocol for Amateur Packet Radio

The topic for the month of March is Media Access (MAC) Protocol. As many amateurs know too well that the collision sense, multiple access (CSMA) scheme that we presently use on amateur packet radio has many drawbacks. One of these is the famous "hidden terminal" problem. Other problems stem from improperly adjusted modems and transceivers, inadequate antennas, and lack of coordination.

Though this topic can spread into a broad discussion, I would like to norrow it down to an examination of improving the MAC layer. One such proposal is Phil Karn's, KA9Q, Multiple Access, Collision Avoidance (MACA) protocol first introduced in the 9th Amateur Radio Computer Networking Conference, 1990 (the paper is avaiable at ftp.ucsd.edu in /hamradio/packet/arrlcnc/1990/maca.ps.Z). Phil's idea has caught on at Xerox PARC, slightly modified, as MACAW. A fine paper intitled "MACAW: A Media Access Protocol for Wireless LAN's" was presented at the ACM SIGCOMM Aug. 94 in London England UK. (Copies can also be ordered from the ACM as document 0-89791-682-4/94/0008 for $3.50 - as side note: the ACM copyright allows permission to copy without fee provided there is no commercial gain). I highly recommend interested readers get this paper.

One point that caught my attention in this paper was the fact that the hidden terminal problem is better described as the "exposed receiver" problem. Carrier sense attempts to avoid collisions by testing the signal strength in the vicinity of the transmitter. However, collisions occur at the receiver, not the transmitter; that is, the presence of two or more interfering signals at the receiver that constitutes a collision. Since the receiver and the sender are typically not co-located, carrier sense does not provide the appropreate information for collision avoidance.

MACA and MACAW attempt to remedy this situation with a proposed sender sending out a request-to-send (RTS) packet. The receiver upon hearing the packet and is not busy, sends a clear-to-send (CTS) packet to the sender. Both RTS and CTS packets contain the length of the information the sender intends to send. This way, if another station overheads either packet, they can defer the expected time of the transmission.

The MACAW paper summarizes four pieces of insight:

1. The relevant congestion is at the receiver, not the sender. This argues the point that Phil and others have made that CSMA is not well suited for packet radio. Instead an Appletalk-like use of RTS-CTS-DATA message exchange. PARC further enhances this scheme with RTS-CTS-DATA-ACK and the an RTS-CTS-DS-DATA-ACK exchange.

2. Congestion is not a homogeneous phenomenon. Rather, the level of congestion varies to the location of the intended reciever. PARC then suggests a separate backoff parameter for each steam, and then for each end of the stream.

3. Learning congestion levels should be a collective enterprise. This suggest copying the backoff parameters from overheard packets so that each station does not have to rely on its own direct experience.

4. The media access protocol should propagate synchronization information about contention periods, so that all devices can contend effectively. Thus an introduction of a RRTS packet so that the receiver can notify the sending station.

Much of the study in wireless protocols in the journals focuses on

point-to-point or many to one (base station) topology. The amateur packet radio network is not (typically) in these catagories. However, several have suggested HUB network topologies (N6GN, et. al.), estabilishing a base station in micro cell sites.

So for the Topic of the Month, I suggest a discussion on the improvement of the media access layer. First we need to define the topology of the network. Do we want HUBs, mutli-hop, or point-to-point. Or do we need a mixture. No one topology can satisfy all geographic areas. It would be great if we could identify and enumerate the specific geographic cases. For example, a large metropolitan areas, rural community, and "way out there." How do we link metropolitan areas together?

Hopefully the discussion will then move onto the protocol for the MAC layer. How can existing CSMA be made to work? Can the benefits outweigh the drawbacks? How can we minimize the drawbacks? Can MACA or MACAW solve the hidden terminal problem? How will it work in a multihop packet radio topology?

73,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943

15. Re: [NETSIG:1011] March Topic of the Month: Media Access Control

From: martins@abqato.scs.philips.com (Steve Martin x7274)
Date: Thu, 2 Mar 1995 10:06:40 +0700
To: netsig@tapr.org
Message-ID: <9503021706.AA26519@abqn42.sca.philips.com>
Rendered body type: text/plain

This is great! This is why I continue to subscribe to the list!

As for me, I'm a relative new-comer to wireless networking, but I have been playing with packet radio for many years. In other words, if I can understand the conversation, most everyone else will be able to also ;-)

Here in Albuquerque, we are reaching "critical mass" on our JNOS network. I would like to learn from others and not have to "re-invent the wheel". I am intrigued by the possibility that there may be "another way" and would like to participate in the discussion. I would also like to take part in future projects/beta testing/code generation/etc. I consider myself an accomplished 'C' programmer, at least here at work :) On with the topic...

Albuquerque, for those that aren't acquainted with the area, is basically in a valley with a tall mountain to the East, Sandia Peak, and a mesa to the west, West Mesa. Santa Fe is to the Northeast and is basically unreachable from the East bench area, but line-o-site from the West Mesa, where I live. Here at Philips Semiconductors, on the east side of the Rio Grande River but not as high as the East bench, we have set up a club packet station that fortunately has access to Santa Fe (with a beam on the Santa Fe end) and to almost all of the valley. It has become the "hub" for our little LAN of JNOS stations.

Right now, the LAN activity is low, but we are in the process of hooking up an internet gateway and a link to the "netrom" guys on another frequency (145.01) (BTW, what features should I compile in for the version of JNOS that will run on the gateway to keep it as small as possible???). So activity will likely increase in the near future. At that point, I expect to see the "hidden transmitter" problem to rear it's head. I also see problems with routing mail BBS <> TCP/IP <> Internet and back.

Santa Fe is the "way out there" station and stations located in the river bottoms will be "the hidden transmitters", with the Philips station the "exposed receiver". I think this would be a perfect test bed for a new protocol!! I will try to get a copy of the papers mentioned so I can speak with intelligence. Thanks for the references.

Let me know if what I said here is worth a follow-up.

****
Steve Martin, Software Engineer
Albuquerque Test Operations - Philips Semiconductors, Albuquerque, NM

```
VAXmail ID:  ABQ85B::MARTINS                          Ph:  505-822-7274
  Internet:  martins@abqn03.scs.philips.com          FAX:  505-822-7237
    PACKET:  NR7P@WB2ARS.NM.USA.NOAM               Pager:  505-857-9078
             nr7p@nr7p.nm.ampr.org           (44.30.0.48 on 145.09 Mhz)

******************  Opinions expressed are purely my own.  **********************
```

16. Re: [NETSIG:1011] March Topic of the Month: Media Access Control

```
From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 2 Mar 1995 12:14:22 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950302121121.9735C-100000@acca>
Rendered body type: text/plain
```

On Thu, 2 Mar 1995 jra@ag9v.ampr.org wrote:

> Steve, N7HPR, suggested a topic for general discussion on NetSIG this month,
> and he's agreed to be the discussion leader for this topic (thanks, Steve!).
> Hopefully the discussion will then move onto the protocol for the MAC layer.
> How can existing CSMA be made to work? Can the benefits outweigh the
> drawbacks? How can we minimize the drawbacks? Can MACA or MACAW solve the
> hidden terminal problem? How will it work in a multihop packet radio topology?
>
> 73,
>
> Steve, N7HPR
>
> srbible@cs.nps.navy.mil
> Naval Postgraduate School, Monterey, CA 93943
>

Question Steve. What do I do with maca.ps.z? I can get it to my DOS computer but it is no readable. Could you do what's necessary and put it on ftp.ucsd in tcpip/incoming for the DOS people?

```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

17. Re: [NETSIG:1013] Re: March Topic of the Month: Media Access Control

```
From: "Daniel 'Eric' Johnson N4SCS" <DEJ7265@tntech.edu>
Date: Thu, 02 Mar 1995 13:44:02 -0600 (CST)
To: netsig@tapr.org
Message-ID: <01HNNUVCLCGIDJ1QHS@tntech.edu>
Rendered body type: text/plain
```

>
> Question Steve. What do I do with maca.ps.z? I can get it to my
> DOS computer but it is no readable. Could you do what's necessary and put
> it on ftp.ucsd in tcpip/incoming for the DOS people?
>
I know this wasn't to me but I could give a quick answer so I did.

Do not type the .Z when getting the file from FTP and uncompression will happen on the UNIX Ftp system. You will get maca.ps . You then need to send it to a postscript printer or get GhostScript. Do an archie for gsview and gs. There are several files that you will need to run GhostScript so look around.

--Eric

```
-------------------------------------------------------------------------------
Daniel Eric Johnson                    Telephone: (615)372-4926
TTU Box 5531                           Internet: dej7265@tntech.edu
Cookeville, TN 38505                   AMPR Net: n4scs@n4scs.ampr.org
                                                        [44.34.01.07]
Department of Electrical Engineering   Packet:   n4scs@wa4uce.#midtn.tn.usa
Graduation May 1995.  Anyone want to give me a job? :-)
-------------------------------------------------------------------------------
```

18. Re: [NETSIG:1013] Re: March Topic of the Month: Media Access Control

From: srbible@cs.nps.navy.mil (Steven Bible)
Date: Thu, 2 Mar 95 11:49:47 PST
To: netsig@tapr.org
Message-ID: <9503021949.AA12374@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

Karl, the file maca.ps.z has been compressed with a program called
gzip. You can get a DOS version, it is called gzip.exe, perhaps
an archie search will turn it up. To unzip it, run the command

  gzip -d maca.ps.z

Typically, gzip'd documents have the ".gz" suffix, the ".z" is an
older convention.

I will see if I can convert the document over to text for those who
do not have postscript abilities.

Steve

19. Re: [NETSIG:1012] Re: March TOM - Media Access Control

From: kb7uv@panix.com (Andrew Funk)
Date: Thu, 02 Mar 1995 14:55:56 -0500
To: netsig@tapr.org
Message-ID: <199503021955.OAA28587@panix3.panix.com>
Rendered body type: text/plain

[snip!]

>the West Mesa, where I live. Here at Philips Semiconductors, on the
>east side of the Rio Grande River but not as high as the East bench, we
>have set up a club packet station that fortunately has access to Santa
>Fe (with a beam on the Santa Fe end) and to almost all of the valley.
>It has become the "hub" for our little LAN of JNOS stations.
>
[snip!]

 I expect to see the "hidden transmitter" problem to rear
>it's head. I also see problems with routing mail BBS <> TCP/IP <>
>Internet and back.
>
>Santa Fe is the "way out there" station and stations located in the
>river bottoms will be "the hidden transmitters", with the Philips
>station the "exposed receiver". I think this would be a perfect test
>bed for a new protocol!! I will try to get a copy of the papers
>mentioned so I can speak with intelligence. Thanks for the
>references.

Is there only one station in Santa Fe, or are there many?

If there is only a single user then what you have described sounds
appropriate, and would be an excellent "exposed receiver" test. However, if
you are linking two LANs, you might consider a protected, point-to-point
"backbone" link.

>From my experience it is a bad idea to do network linking on user channels.
Both operations suffer. However, when the network links are on separate
frequencies, away from direct user traffic, everyone benefits. Users don't
find their traffic limitted by network links, and the network links don't
have to back-off due to exposed receiver syndrome, etc.

73, Andy
--
  _____________________ Andrew Funk, KB7UV _____________________
 | Tech Producer/Editor   Internet: kb7uv@panix.com |
 | WCBS-TV Channel 2 News   http://www.webcom.com/~arfunk/ |
 | New York, NY USA   --- INSERT COMMERCIAL HERE --- |

20. Re: [NETSIG:1015] Re: March Topic of the Month: Media Access Control

From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 2 Mar 1995 15:40:09 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950302153627.24285A-100000@acca>
Rendered body type: text/plain

On Thu, 2 Mar 1995, Steven Bible wrote:

> Karl, the file maca.ps.z has been compressed with a program called
> gzip. You can get a DOS version, it is called gzip.exe, perhaps

> an archie search will turn it up. To unzip it, run the command
>
>   gzip -d maca.ps.z
>
> Typically, gzip'd documents have the ".gz" suffix, the ".z" is an
> older convention.
>
> I will see if I can convert the document over to text for those who
> do not have postscript abilities.
>
> Steve
>

Yes it's a big task Steve. I got tar.zip and think it decompresses some unix things. But I am not expert at these things and sure would like to see a text or Word Perfect or Word format document that is pkziped and on ftp.ucsd.edu for the unwashed masses...:-)

73, karl k5di

21. Re: [NETSIG:1017] Re: March Topic of the Month: Media Access Control

From: srbible@cs.nps.navy.mil (Steven Bible)
Date: Thu, 2 Mar 95 16:40:17 PST
To: netsig@tapr.org
Cc: k5di@acca.nmsu.edu, tmoulton@ram.net
Message-ID: <9503030040.AA20614@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

I guess this should be a lesson to me :-)

For those of you having problems with the maca.ps.z and maca.ms.Z files, here's a little tutorial:

For maca.ps.z, you first need to uncompress the file with gzip. I've posted a DOS version of gzip.exe on ftp.ucsd.edu in the directory /hamradio/packet/tcpip/incoming. To uncompress the file, type:

```
C:\gzip -d maca_ps.z
```

or whatever you named the file in your DOS machine. You now need to print the file out on a Postscript printer. If you do not have a Postscript printer, try and find a program named "ghostview." If anyone has a copy of ghostview for DOS or MS Windows they could recommend, please let us know.

For maca.ms.Z, you need to uncompress it with a program named "uncompress." Yes, there are DOS versions in addition to Unix versions. Next you need to 'compile' the file in a program named nroff. Type the command:

```
#nroff -ms maca.ms > maca.txt
```

The extension ".ms" on the file tells you which macro to run nroff with. Now you have a text file ready to print. You can also 'make' a Postscript file from maca.ms, but that's redundant.

Lastly, I made a text file for those of you who do not have the above abilities. It's not as pretty as a Postscript printed document, but it is the content that is the most important. I uploaded it to ftp.ucsd.edu in the /hamradio/packet/tcpip/incoming directory. It is called maca.zip. (I trust everyone knows how to unzip a document :-).

As an aside - for those of you who do not have access to a Unix machine should look at Linux. It is a full 32-bit multitasking operating system Unix clone for 386, 486, and Pentium computers. It is free for the downloading (ftp that is). The best place to learn more about Linux is to read the document: "Linux Installation Guide" by Matt Welsh. It is available on sunsite.unc.edu in the directory /pub/Linux/docs/LDP. Yes, there are text and Postscript versions there. For those of you on the Web, try:

```
http://sunsite.unc.edu/mdw/mdw.html
```

73,

Steve, N7HPR
Naval Postgraduate School, Monterey, CA

22. [NETSIG:952] GRAPES-Based Repeater

From: steve.diggs@totrbbs.radio.org (Steve Diggs)
Date: Tue, 28 Feb 95 06:53:00 -0500
To: netsig@tapr.org
Message-ID: <763.7.uupcb@totrbbs.radio.org>
Rendered body type: text/plain

-> I'm interested in configuring a 56Kbd repeater based on the GRAPES
-> modem/PI2 card to serve as a backbone for our LAN. I'd appreciate
-> getting an e-mail address from anyone who's been down this road
-> already and would be able to answer some questions. By the way, are
-> existing implementations operating as bit regenerating repeaters or
-> relaying frames?

Rick,

The East Atlanta LAN makes extensive use of the GRAPES 56kb modem,
including use of the PI2 card as our data interface for it.

I'll ask Dale Heatherington (WA4DSY, inventor of the modem) about the
packet pass-thru method.

I guess the best start to this conversation is a direct email describing
your goals and existing setup.

Regards,
Steve Diggs, KB4ZTN

Top Of The Rock BBS - Lilburn, GA   SYSOP: Steve Diggs
Snailmail: 4181 Wash Lee Ct.
Phone: +1 404 921 8687   Lilburn, GA 30247-7440

23. [NETSIG:952] GRAPES-Based Repeater

From: steve.diggs@totrbbs.radio.org (Steve Diggs)
Date: Tue, 21 Feb 95 06:52:00 -0500
To: netsig@tapr.org
Message-ID: <737.7.uupcb@totrbbs.radio.org>
Rendered body type: text/plain

->   Subject: Time:1:47
-> PM
-> OFFICE MEMO   GRAPES-Based Repeater
-> Date:2/17/95 I'm interested in configuring a 56Kbd repeater based on
-> the GRAPES modem/PI2 card to serve as a backbone for our LAN. I'd
-> appreciate getting an e-mail address from anyone who's been down this
-> road already and would be able to answer some questions. By the way,
-> are existing implementations operating as bit regenerating repeaters
-> or relaying frames?

Hi Rick,
I am President of the East Atlanta LAN, and our group is an active user
of the WA4DSY/GRAPES modem. I'd be happy to answer any and all questions
you have on the unit. You might want to obtain the file GRAPES.ZIP,
which is available via anonymous ftp from wa4mei.radio.org in the
/pub/hamradio/packet directory. You've probably seem most of this
before, but start with that.

We're about to add another backbone site to your GRAPES 56k backbone
here in Atlanta, so I'm current on all the issues on how to get it
going.

BTW, we run JNOS 1.10g or h on all our switch sites, supporting TCP/IP,
AX.25 and NETROM in some cases. I suppose that I have to answer your
last question that both is true. Also, please respond with your
individual Email address.

Regards,
Steve Diggs,KB4ZTN

Top Of The Rock BBS - Lilburn, GA   SYSOP: Steve Diggs
Snailmail: 4181 Wash Lee Ct.
Phone: +1 404 921 8687   Lilburn, GA 30247-7440

24. Free Unix (was Re: March Topic of the Month: Media Access Control)

From: "David Kelly" <dkelly@iquest.com>
Date: Thu, 2 Mar 95 21:53:58 CST
To: netsig@tapr.org
Message-ID: <dkelly.1144590478K@mail.iquest.com>
Rendered body type: text/plain

Steve, N7HPR said:
>As an aside - for those of you who do not have access to a Unix
>machine should look at Linux. It is a full 32-bit multitasking
>operating system Unix clone for 386, 486, and Pentium computers.
>It is free for the downloading (ftp that is). The best place to
>learn more about Linux is to read the document: "Linux Installation
>Guide" by Matt Welsh. It is available on sunsite.unc.edu in the
>directory /pub/Linux/docs/LDP. Yes, there are text and Postscript
>versions there. For those of you on the Web, try:
>
> http://sunsite.unc.edu/mdw/mdw.html

I might also add FreeBSD to your list of free Unix clones. Both Linux
and FreeBSD have their advantages. And both are available on CD-ROM
with source code to everything. Either will be the best computer
bargain you will ever find.

73,
--
David Kelly N4HHE,   n4hhe@amsat.org,   dkelly@iquest.com

The human mind ordinarily operates at only ten percent of its capacity
-- the rest is overhead for the operating system.

25. BPQ Question

From: jkbe@aluxs.att.com (John Bednar)
Date: Fri, 3 Mar 95 08:03:07 EST
To: netsig@tapr.org
Message-ID: <9503031303.AA00752@lena>
Rendered body type: text/plain

I am trying to help a friend with a BPQ problem. He's running
version 4.08a with multiple ports along with FBB. There are several
nodes that he's trying to lock out. He added the appropriate
call, quality (0), and port to the BPQ configuration file and
rebooted the system. Initially, the unwanted nodes do not appear
in the Nodes list however, when the distant station broadcasts,
these unwanted nodes re-appear. The Routes command lists the
unwanted nodes as locked (! on the end of the line) and they
have a quality of zero. Even though MINQUAL=160 and the routes
have a quality of zero, users can still connect to the
unwanted nodes. (I did verify that the route to these unwanted nodes
is direct and not through another node.)

Oddly enough my friend suggests that he hasn't been able to ever
get this feature to work with older versions of BPQ.

I'm out of ideas. Are there any suggestions from the BPQ Guru's?

Thanks in advance,
John, WB3ESS
aljkbe@attme.att.com

26. Re: [NETSIG:1021] Free Unix (was Re: March Topic of the Month: Media Access Control)

From: "Bill Barnes, N3JIX" <wlbarn@planetx.bloomu.edu>
Date: Fri, 3 Mar 1995 08:30:33 -0500 (EST)
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <Pine.SOL.3.91.950303082904.6381C-100000@planetx>
Rendered body type: text/plain

On Thu, 2 Mar 1995, David Kelly wrote:

> I might also add FreeBSD to your list of free Unix clones. Both Linux
> and FreeBSD have their advantages. And both are available on CD-ROM
> with source code to everything. Either will be the best computer
> bargain you will ever find.

Ah, another FreeBSD person. I prefer it to Linux, probably becuase I
like Sun OS better than SysV. Of course, that's a apples and oranges debate.

Can I drop you a note about some small problems I've been having?

73, de Bill, N3JIX
```
*****************************************************************
* Bill Barnes, N3JIX                    * Bloomsburg Unviersity  *
* Internet:  wlbarn@planetx.bloomu.edu  * Bloomsburg, Pa         *
* Packet  :  n3jix@n3jix.#epa.pa.usa.noam                        *
*****************************************************************
```

27. Re: [NETSIG:1022] BPQ Question

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 3 Mar 1995 07:01:07 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950303065839.21916B-100000@acca>
Rendered body type: text/plain

On Fri, 3 Mar 1995, John Bednar wrote:

> I am trying to help a friend with a BPQ problem. He's running
> version 4.08a with multiple ports along with FBB. There are several
> nodes that he's trying to lock out. He added the appropriate
> call, quality (0), and port to the BPQ configuration file and
> rebooted the system. Initially, the unwanted nodes do not appear
> in the Nodes list however, when the distant station broadcasts,
> these unwanted nodes re-appear. The Routes command lists the
> unwanted nodes as locked (! on the end of the line) and they
> have a quality of zero. Even though MINQUAL=160 and the routes
> have a quality of zero, users can still connect to the
> unwanted nodes. (I did verify that the route to these unwanted nodes
> is direct and not through another node.)
>
> Oddly enough my friend suggests that he hasn't been able to ever
> get this feature to work with older versions of BPQ.
>
> I'm out of ideas. Are there any suggestions from the BPQ Guru's?
>
> Thanks in advance,
> John, WB3ESS
> aljkbe@attme.att.com
>

John what your trying to do is keep packets from going to the unwanted route node. If you make the quality of that route 0, you have accomplished the chore. Why worry about it showing in the routes list? I like it. It tells me what I did.

```
 ***************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory              *
 *                                                                           *
 ***************************************************************************
```

28. X1J Magager and X1J/4

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 3 Mar 1995 10:39:01 -0800
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <ab7d11b14d021004f03f@[129.46.12.181]>
Rendered body type: text/plain

I have 2 qustions:
1. Is there any rumors when X1J/4 will be available and where?

2. Some timeago, there was a piece of software written by Bill Stack. He offered a copy to anyone that sent him a disk and a SASE. I did so, and sent a follow-up note. No response. Does any one heve a copy? What do you think of it? I will send a disk and SASE or FTP or...
Thanks.
Marvin. WB6PKK
mmunster@qualcomm.com

To: Bill Slack <72305.426@compuserve.com>
From: mmunster@qualcomm.com (Marvin Munster x5388)
Subject: Re: Forward: [NETSIG:107] X1J Manager
Cc:
Bcc:
X-Attachments:

Hello Bill,
Some time ago, I sent you a disk in a SASE in order to obtain a copy of
your program. I was just wondering how it was comming. You might send me
a return here and let me know.
Thanks.

Marvin. - WB6PKK
mmunster@qualcomm.com

>Hello Marvin,
>
>   Well it seems you have found the author of that piece of code.
>Simple fact is that I have not uploaded it anyplace else. Not intentional
>descrimination, but it was the most convient for me. If you want a copy, I
>will be happy to send you one of you drop me a SASE and disk to
>
>Bill Slack
>321 East Shore Trail
>Sparta, NJ 07871
>
>I unfortunatly do not have FTP access so it is not easy for me to leave it
>anyplace it can be picked up.
>
>73 Bill

29. Re: [NETSIG:1011] March Topic of the Month: Media Access Control

From: tmoulton@ram.net
Date: Fri, 03 Mar 95 15:18:14 EST
To: netsig@tapr.org
Message-ID: <15021573.1958@ram.net>
Rendered body type: text/plain

The directions helped...

Phil's article is interesting... no pictures... always ARRL books for CNC...

We need to pick topologies, three come to mind

1) Random (Like 145.01)
2) Hub (Bunch of users off one switch)
3) Backbone

#1 needs something based upon MACA

#2 Might best be solved with the switch being the Master of the LAN.
    (Could even have users request channel time from the master when
     talking directly to each other)

#3 Use CSMA/CD when all can hear each other or just point to point or
    even better use Full Duplex

What other CHannel Access protocols are out there?
(and where can we get the paper describing it?)

Fantasitc topic!

tom

30. Re: [NETSIG:1022] BPQ Question

From: lawrence@combdyn.com (Lawrence *The Dreamer* Chen)
Date: Fri, 3 Mar 95 12:10:13 MST
To: netsig@tapr.org
Message-ID: <9503031910.AA24094@combdyn>
Rendered body type: text/plain

According to John Bednar:
>

>
> I am trying to help a friend with a BPQ problem. He's running
> version 4.08a with multiple ports along with FBB. There are several
> nodes that he's trying to lock out. He added the appropriate
> call, quality (0), and port to the BPQ configuration file and
> rebooted the system. Initially, the unwanted nodes do not appear
> in the Nodes list however, when the distant station broadcasts,
> these unwanted nodes re-appear. The Routes command lists the
> unwanted nodes as locked (! on the end of the line) and they
> have a quality of zero. Even though MINQUAL=160 and the routes
> have a quality of zero, users can still connect to the
> unwanted nodes. (I did verify that the route to these unwanted nodes
> is direct and not through another node.)
>
Locking a ROUTE as Quality of zero, only means that your node won't propagate
information to other nodes of the existence of the route. And, when it
comes for selecting which route to take to a given far off node....it will
attempt this route last.

You will still be able to connect to this node, and your node still might
use this route if an attempt on a higher quality path fails.

--
 WORK: lawrence@combdyn.com | PHONE 403 529 2162 | FAX 529 2516 | VE6LKC
 HOME: dreamer@lhaven.uumh.ab.ca | 403 526 6019 | 529 5102 | VE6PAQ

  Praxis Society K12 BBS - 403 529 1610 | Lunatic Haven BBS - 403 526 6957
 ----
 disclamer = (working_for && !representing) + (Combustion Dynamics Ltd.);

31. using Kantronics KPC-9612 at 9600bps

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Fri, 3 Mar 95 17:51:43 -0700
To: tcp-group@ucsd.edu, netsig@tapr.org, faster@ve7frg.ampr.org
Cc: Danny.Hua@m.cc.utah.edu
Message-ID: <9503040051.AA02461@n.kb7eec.ampr.org>
Rendered body type: text/plain

Help -- I got a lot of good, correct responses to my previous query, so I hope
you all don't mind another.

I am connecting a Kantronics KPC-9612 TNC to a Kenwood TM-733A radio, for
9600bps packet operation. The problem seems to be that the transmitted signal
is distorted, and barely recognized as a carrier signal by other stations on
the 431.75MHz G3RUH-type 9600bps packet network here in Salt Lake.

This setup receives data just fine, it is just the transmit signal that is
bad. I have tried adjusting deviation and changing jumper settings according
to the manual, and have contacted Kantronics once. Kantronics so far gave me
a fax showing cable wiring for the KPC-9612 to TM-733A specifically.

Maybe it is just a defective KPC-9612, since Kantronics seems to think that
this TNC+radio combination should work. I thought I'd send out a message here
to see if anyone else has experience with the KPC-9612 at 9600bps, or perhaps
even with the TM-733A specifically. The next step would be to send back the
KPC-9612 for repair, I think.

One more piece of information: Before connecting the KPC-9612 to the TM-733A,
I tried connecting the KPC-9612 to a Radio Shack HTX-404 70cm radio as I
mentioned in my previous message. That KPC-9612/HTX-404 combination also
receives data fine, and in fact transmitted data works for small packets, but
not large ones.

Thanks for any info,
Gary
[Please observe Reply-To: kb7eec@uugate.ampr.org line in message header.]

32. [NETSIG:1022] BPQ Questio

From: n7mrp@phx-az.com (Daniel Meredith)
Date: Sat, 4 Mar 1995 01:40:47 GMT
To: netsig@tapr.org
Message-ID: <950303184209206@phx-az.com>
Rendered body type: text/plain

-> From: jkbe@aluxs.att.com (John Bednar)
-> To: netsig@tapr.org
-> Date: Fri, 3 Mar 1995 07:18:54 -0600
-> Subject: [NETSIG:1022] BPQ Question
->

```
->
-> I am trying to help a friend with a BPQ problem. He's running
-> version 4.08a with multiple ports along with FBB. There are several
-> nodes that he's trying to lock out. He added the appropriate
-> call, quality (0), and port to the BPQ configuration file and
-> rebooted the system. Initially, the unwanted nodes do not appear
-> in the Nodes list however, when the distant station broadcasts,
-> these unwanted nodes re-appear. The Routes command lists the
-> unwanted nodes as locked (! on the end of the line) and they
-> have a quality of zero. Even though MINQUAL=160 and the routes
-> have a quality of zero, users can still connect to the
-> unwanted nodes. (I did verify that the route to these unwanted nodes
-> is direct and not through another node.)
->
-> Oddly enough my friend suggests that he hasn't been able to ever
-> get this feature to work with older versions of BPQ.
->
-> I'm out of ideas. Are there any suggestions from the BPQ Guru's?
->
-> Thanks in advance,
-> John, WB3ESS
-> aljkbe@attme.att.com

Remove the nodes you are attempting to lock out and make the following
adjustments...

Make the PORTQUAL=xxx 1 digit higher than the MINQUAL parameter...

This will solve the broadcast problem...However the other nodes can
still connect if they hear his broadcast and they will get assigned a
low quality...see below if you don't want this to happen...

Now,  if he is wanting them to
be completely LOCKED OUT,  do the following:

If he has a pre-determined set of routes,  then do the following:

Set the MAXROUTES parm to the EXACT amount of stations he has locked in
in the ROUTES: section.


There are some other hidden commands that you can get to via SYSOPH if
you need to.


Dan

-----                      \---------------/                         -----
                     Arizona Network Intertie Group
                 "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP                   Voice: +1-602-489-7384
P.O. Box 45378                               Fax  : +1-602-956-2566
Phoenix,  Arizona                            BBS  : +1-602-912-0225
          85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator
```

33. X1J Magager and X1J/4

```
From: jkbe@aluxs.att.com (John Bednar)
Date: Fri, 3 Mar 95 14:35:17 EST
To: netsig@tapr.org
Message-ID: <9503031935.AA00943@lena>
Rendered body type: text/plain
```

```
> 1.  Is there any rumors when X1J/4 will be available and where?

Dave is still tweeking X1JR4. He might be working a few changes
releated to the recent discussions. I'm sure we'll be the first
to know since Dave frequents this reflector.


> 2.  Some timeago, there was a piece of software written by Bill Stack.  He
> offered a copy to anyone that sent him a disk and a SASE.  I did so, and
> sent a follow-up note.  No response.  Does any one heve a copy?  What do
> you think of it?  I will send a disk and SASE or FTP or...

I have a copy of X1J Manager. I tried it and it does NOT work with
```

X1JR2. If you still want a copy, I'd be glad to send
you a copy if you send me a formatted
floppy with return postage. Any callbook in the last 10 years
has my Northampton, PA address.

John, WB3ESS

34. Amateur Packet Radio: a foot-path

From: ac448@rgfn.epcc.Edu (Roy E Gould)
Date: Sun, 5 Mar 95 10:05:04 MST
To: netsig@tapr.org
Message-ID: <9503051705.AA16279@rgfn.epcc.Edu>
Rendered body type: text/plain

Hello NETSIG

I have just read most of the messages posted on the BBSSIG in past
few days about Internet / telephone (non-Amateur Radio) forwarding
and would like to submit a few of my thoughts for your
consideration.

I operate a BBS and several nodes in this area. I have had access
to the Internet for about 1.5 years. What a difference! The Internet
has its problems but is light years ahead of Amateur Radio. We
have been hearing that this is the "Information Age" and about the
information Super-Highway. But the stage where Amateur Radio is today
I suggest should be called the information foot-path. It is not even
a dirt-road yet!

Our very talented programmers have written fantastic software that
works great. But our radio links between the computers running
this software is very poor.

How can Amateur Radio compete or even stay in the shadow of services
available on the Internet such as the World Wide Web? I have the
privilege of having an ethernet connection (10 megabits/sec)
into the Internet at work. It is amazing to watch the WWW
through such a connection. While it does still require some
patience while waiting for a 1 Meg .GIF picture to come through it
is not unbearable. I see that in the not to distant future it will
be common to have a connection into the Information Super-Highway
at home where effective data rates are not far from what I have
available to me at work now. I have to ask myself the question
would I prefer to spend my money on a good high speed data
connection into the Internet or spend it building Amateur Radio
packet switch sites. Where do I get the most bang for the buck?

This all makes the prospects for Packet Radio seem pretty dismal
but things may not be all that bad. There are some inherent
advantages to using radio links instead of wire links. These
advantages must be fully defined and exploited by the Amateur
Radio community if Packet Radio is to survive.

We are still stuck for the most part at 1200 baud. Very few
users have moved to higher bauds. The primary reason is economics.
Most Hams want to use their voice radios for packet. The IF
filters in voice radios will not pass data at bauds higher than
9600. If there is not some kind of break through in radios we will
be stuck at 1200 baud forever. Perhaps some time in the future
cheap high speed radios will become available, something like
happened in the 1960s when surplus commercial FM radios became
available. This caused the world of FM repeaters to grow like
wildfire.

I have fairly seriously considered converting the primary 145.010
1200 baud node serving El Paso, TX (ELP:N5RG-1) to 19.2 Kbaud.
But this would be a drastic change and I expect a cry of anguish
would arise from the users. In the long run it would be an
improvement but the initial reaction would most likely be strongly
negative.

But, perhaps the reaction will be sufficiently cushioned by the
architecture of ELPNET. We have provided 1200 baud inputs into
ELPNET on 144.95, 145.05, and 145.09 MHz. Our sister city of
Las Cruces, NM has an input on 145.07 MHz. We have a 9600 baud
input on 145.03. So most of the 1200 baud only users could still
access ELPNET even if the 145.01 node located on the mountain top
were changed to 19.2 Kbaud (would probably change frequency to
144.99 MHz).

Under the current rules 19.2 Kbaud is the highest legal baud on 2-m.
We should go for the maximum and not be satisfied with 9600 baud
even if this would simplify the radio situation. This would
be a tremendous improvement and would perhaps bring us up to the
level of a dirt-road. But building the Super-Highway will require
much greater improvements.

73, Roy Gould N5RG in El Paso, Texas

35. Re: using Kantronics KPC-9612 at 9600bps

From: bruce@pixar.com (Bruce Perens)
Date: Mon, 6 Mar 95 15:04 PST
To: faster@ve7frg.ampr.org, netsig@tapr.org, tcp-group@ucsd.edu,
Gary Crum <kb7eec@uugate.wa7slg.ampr.org>
Cc: Danny.Hua@m.cc.utah.edu
Message-ID: <m0rllpA-0005p7C@mongo.pixar.com>
Rendered body type: text/plain

> I am connecting a Kantronics KPC-9612 TNC to a Kenwood TM-733A
> radio, for 9600bps packet operation. The problem seems to be that
> the transmitted signal is distorted, and barely recognized as a
> carrier signal by other stations on the 431.75MHz G3RUH-type 9600bps
> packet network here in Salt Lake.

My KPC-9612 was shipped much too "hot" to drive my TEKK radio, which
required about 130 milivolts. I had to change the output jumper to the
"low" setting to make it operate at all. Tweaking the pot wasn't
sufficient.

Bruce
--
Bruce Perens AB6YM 510-215-3502 Bruce@Pixar.com

Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.rahul.net/perens/LinuxForHams

36. Re: [NETSIG:1031] Amateur Packet Radio: a foot-path

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 6 Mar 1995 16:31:03 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950306161904.20910A-100000@acca>
Rendered body type: text/plain

On Mon, 6 Mar 1995, Roy E Gould wrote:

>
>
> Hello NETSIG
>
> I have just read most of the messages posted on the BBSSIG in past
> few days about Internet / telephone (non-Amateur Radio) forwarding
> and would like to submit a few of my thoughts for your
> consideration.

Deleted sections*********

> This all makes the prospects for Packet Radio seem pretty dismal
> but things may not be all that bad. There are some inherent
> advantages to using radio links instead of wire links. These
> advantages must be fully defined and exploited by the Amateur
> Radio community if Packet Radio is to survive.
>
> We are still stuck for the most part at 1200 baud. Very few
> users have moved to higher bauds. The primary reason is economics.
> Most Hams want to use their voice radios for packet. The IF
> filters in voice radios will not pass data at bauds higher than
> 9600. If there is not some kind of break through in radios we will
> be stuck at 1200 baud forever. Perhaps some time in the future
> cheap high speed radios will become available, something like
> happened in the 1960s when surplus commercial FM radios became
> available. This caused the world of FM repeaters to grow like
> wildfire.

Roy, do you remember that MFJ radio I showed you? I think that could
be used as is for 19.2 or, with small changes do so. It is a simple radio
and not expensive. We need to buy one....:-)

>
> I have fairly seriously considered converting the primary 145.010
> 1200 baud node serving El Paso, TX (ELP:N5RG-1) to 19.2 Kbaud.
> But this would be a drastic change and I expect a cry of anguish
> would arise from the users. In the long run it would be an
> improvement but the initial reaction would most likely be strongly
> negative.
>
> But, perhaps the reaction will be sufficiently cushioned by the
> architecture of ELPNET. We have provided 1200 baud inputs into
> ELPNET on 144.95, 145.05, and 145.09 MHz. Our sister city of
> Las Cruces, NM has an input on 145.07 MHz. We have a 9600 baud
> input on 145.03. So most of the 1200 baud only users could still
> access ELPNET even if the 145.01 node located on the mountain top
> were changed to 19.2 Kbaud (would probably change frequency to
> 144.99 MHz).
>
> Under the current rules 19.2 Kbaud is the highest legal baud on 2-m.
> We should go for the maximum and not be satisfied with 9600 baud
> even if this would simplify the radio situation. This would
> be a tremendous improvement and would perhaps bring us up to the
> level of a dirt-road. But building the Super-Highway will require
> much greater improvements.
>
> 73, Roy Gould N5RG in El Paso, Texas
>
>
        Well remember when #elp went up at 9600 baud. It was at least a
"jeep road" until everyone and his cousin got on the frequency.

        I think the MFJ radio, TAPR modem or G3RUH from PacComm if you
hate to solder small components, and the MFJ or Tiny-2 1200 baud modem
will cost about $200 to go from 1200 to 19,200 b/sec. That is a good
price to go from trail to Pavement, with pot holes....

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
 *   *
 * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
 *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
 *   *
 *   Electrical Engineer with the Army Research Laboratory   *
 *   *
 ****

37. Use of Kenwood TM-421/431 on 9k6? (Does it work well/etc?)

From: ka7oei@uugate.wa7slg.ampr.org
Date: Mon, 06 Mar 95 23:18:31 mdt
To: netsig@tapr.org
Message-ID: <51374@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

I would be interested in the use of the Kenwood TM 421/431 on 9600 baud.

How is its RX/TX turnaround speed, etc. and I'd be interested in hearing
from anyone who has done the 'mod for this (and details, too...)

Also, what is the rundown on current single-band models (70cm, particularly)
for use on 9600 baud (particularly with good RX/TX turnaround time...)

Thanks in advance,

<Clint>

clint@uugate.aim.utah.edu

38. Re: [NETSIG:1034] Use of Kenwood TM-421/431 on 9k6? (Does it work well/etc?)

From: nielsen@primenet.com (Bob Nielsen)
Date: Tue, 07 Mar 1995 00:12:10 -0700
To: netsig@tapr.org
Message-ID: <199503070712.AAA13518@mailhost.primenet.com>
Rendered body type: text/plain

>I would be interested in the use of the Kenwood TM 421/431 on 9600 baud.
>
>How is its RX/TX turnaround speed, etc. and I'd be interested in hearing

>from anyone who has done the 'mod for this (and details, too...)
>
>Also, what is the rundown on current single-band models (70cm, particularly)
>for use on 9600 baud (particularly with good RX/TX turnaround time...)
>
>Thanks in advance,
>
><Clint>
>
>clint@uugate.aim.utah.edu

I have a TM421 which I modified to use with the TAPR 9600 modem. At the time (about two years ago) there was a 9600 bps repeater with about three users. I found that the repeater couldn't seem to copy me, although I had very good copy of its output. I tried reversing the tx and rx and was able to connect to each of the users without going through the repeater, so I think things were fairly close (I used a Heathkit dev meter to set the deviation, but did not check things out with a scope). Unfortunately the repeater was removed from service and 9600 activity here died out before I could determine what the problems were. Possibly the loop bandwidth was allowing the loop to track out some of the modulation.

The mods to the radio were the usual ones, to feed the modulating signal to the f.m.'d stage and take the output from the discriminator, with appropriate decoupling. Other than soldering to some pretty small components, there appeared to be no problems.

Bob

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@crc.w6swe.ampr.org
WWW: http://primenet.com/~nielsen/

39. Re: [NETSIG:1033] Re: Amateur Packet Radio: a foot-path

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Mon, 6 Mar 1995 23:36:41 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503070736.XAA00131@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> On Mon, 6 Mar 1995, Roy E Gould wrote:
>
> Deleted sections*********
>
> > We are still stuck for the most part at 1200 baud. Very few
> > users have moved to higher bauds. The primary reason is economics.
> > Most Hams want to use their voice radios for packet. The IF
> > filters in voice radios will not pass data at bauds higher than
> > 9600. If there is not some kind of break through in radios we will
> > be stuck at 1200 baud forever. Perhaps some time in the future
> > cheap high speed radios will become available, something like
> > happened in the 1960s when surplus commercial FM radios became
> > available. This caused the world of FM repeaters to grow like
> > wildfire.

We get what we pay for. We don't try to use our 2 meter FM rigs for HF SSB. In fact, I'm certain I hear a few softly muffled chuckles right now. 2 meter FM conversion to HF SSB, indeed. Who'd like to do a "top ten reasons you can't use 2m FM for HF"? Nope - we go out and buy HF SSB rigs, like the sensible people we sometimes can be :-) We also would laugh off attempts at making 2 meter FM rigs do SSB, for pretty much the same reasons. Most are simply not suited to the task.

Then why are we so insistent on using 2m FM rigs for medium and high speed data, an application they're equally unsuited for?

With "normal" FM rigs designed for voice, we get fairly usable to excellent 1200 baud, but oftentimes, it's not very useful at 9600. IF filters usually are NOT the problem, though. The biggest problem is the PLL modulation, which is not phase linear.

Also, IF filters are simple to change out. Solder-suck 4 leads and pop in a new one. yawn....

> > I have fairly seriously considered converting the primary 145.010
> > 1200 baud node serving El Paso, TX (ELP:N5RG-1) to 19.2 Kbaud.
> > But this would be a drastic change and I expect a cry of anguish
> > would arise from the users. In the long run it would be an

> > improvement but the initial reaction would most likely be strongly
> > negative.

All change is initially met with outcry by those who are satisfied by the
status quo. Those wanting to improve things need to have a thick skin
regarding the nay-sayers.

> > But, perhaps the reaction will be sufficiently cushioned by the
> > architecture of ELPNET. We have provided 1200 baud inputs into
> > ELPNET on 144.95, 145.05, and 145.09 MHz. Our sister city of
> > Las Cruces, NM has an input on 145.07 MHz. We have a 9600 baud
> > input on 145.03. So most of the 1200 baud only users could still
> > access ELPNET even if the 145.01 node located on the mountain top
> > were changed to 19.2 Kbaud (would probably change frequency to
> > 144.99 MHz).
> >
> > Under the current rules 19.2 Kbaud is the highest legal baud on 2-m.
> > We should go for the maximum and not be satisfied with 9600 baud
> > even if this would simplify the radio situation. This would
> > be a tremendous improvement and would perhaps bring us up to the
> > level of a dirt-road. But building the Super-Highway will require
> > much greater improvements.

19k2 is legal on 2 meters, but not using direct fsk. Remember the
bandwidth maximums on 2 meters. You're probably going to find your
Carsons Rule 19k2 bandwidth around +\- 32 kHz. If you use the Kantronics
19k2 "modem" (actually raw data and a slicer), it's probably going to be
far wider due to the square wave nature of raw data.

Also, 19k2 WILL require IF filter replacement (possibly both 455 kHz and
10.7 mHz), and you may have problems finding a sufficiently wide filter
from common sources.

With current radio specs (e.g. txdelay and txtail requirements), the jump
from 9600 to 19k2 is not twice as fast. A TXD of 10 eats up about 125
bytes @ 9600 baud. At 19k2, this would be 250 bytes - a whole packet @
paclen 256. Unless you have a SUPER good path, you should be running
maxframe 1. Therefore your actual speed increase would only be 33%. Now
factor in the ACK and you have substantially less.

Now if you can increase link visibility, eliminate hidden terminals (or
exposed receivers), and reduce t/r time, you can make significant
increases in data throughput.

One way to do some of this is with a regenerator, or "packet duplex
repeater" (like a voice repeater, with a repeater pair, cavity filters,
and the lot.) For high-site facilities, you really can't beat a duplex
repeater. Uses twice the frequencies of a single node, but for the
price, it virtually eliminates collisions, and allows everyone to run
minimal power.

Of course, like a voice repeater, it "hogs" those two frequencies over
its coverage area, but if you're in a reasonably sparsely populated area
(e.g. not NY or LA :-) with available channels, it's a good investment.

Yes, they co$t, but as I opened, "you get what you pay for".

Hope this is helpful.

 -- mike

40. RE: X-1J Release 4

From: roberts@ses6a.bt.co.uk
Date: Tue, 7 Mar 1995 09:05:09 +0000
To: netsig@tapr.org
Message-ID: <199503070909.DAA21005@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Thanks.

I was going to release it today but need to check something
out first for John.

The '#' one is a good idea and easy to do. I'll include it.

The '0' bits one ought to be easy but I just need to check
the source code for boundary conditions. No guarantees. At
the worst it's two entries in the table.

I hope to release the full source tree at the same time as the
main distribution.

73's

Dave

41. What is an IN (was TAPR [1009])

From: roberts@ses6a.bt.co.uk
Date: Tue, 7 Mar 1995 09:05:26 +0000
To: netsig@tapr.org
Message-ID: <199503070909.DAA21016@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

In answer to the question 'what is an IN ?'

IN stands for Intelligent Network.

An IN is the modern form of telecommunications switching system.

In systems prior to the late 80's, when you gave an exchange an
address (ie a phone number) the number caused the exchange to
decide on appropriate routing to your destination as the address
was largely geographic (like +44 1473 224511, where 44 means UK and
1473 tells the UK end of the link it is for Ipswich and the local
switch finds the appropriate port)

When you introduce mobility or other modern services, you lose the
ability to perform such simple routing. Instead, the switch
recognises the number (or partial number, or just the fact that
you picked the handset up etc) and sends a 'trigger' to the
Intelligence Layer. The IN supports various applications and it
decides on the basis of the information provided by the switch
and the profile of the user (important point this) what to do
with it (like invoke applications, put a voice service temporarily
on the line, collect MF4 digits etc) and subsequently controls the
call.

It is the fact that the IN has access to user profiles and makes
decisions of this nature that distinuish it from simple routing
systems such as ROSE, Net/Rom etc.

The Intelligence layer then supports applications.

There are ITU standards that describe the structure of an IN and
the protocols used to support it. X.25 (as used in ROSE) or
AX.25 (as used by the rest of us) are the lower layer
protocols that might be used either to connect the IN servers
together or to form the underlying switching system.

Dave

42. Re: [NETSIG:1038] What is an IN (was TAPR [1009])

From: tmoulton@ram.net
Date: Tue, 07 Mar 95 07:07:44 EST
To: netsig@tapr.org
Message-ID: <15021573.1965@ram.net>
Rendered body type: text/plain

>There are ITU standards that describe the structure of an IN and
>the protocols used to support it. X.25 (as used in ROSE) or

I have looked around in the ITU gopher server and would like to know the Name
or Number of some of the ITU standards you are refering to.

tom

43. Re: Amateur Packet Radio: a foot-path

From: David Rush <rush@cacfs.ks.erg.sri.com>
Date: Tue, 07 Mar 95 08:53:06 -0600
To: netsig@tapr.org
Message-ID: <9503071453.AA01212@cacfs.ks.erg.sri.com>
Rendered body type: text/plain

>I suggest should be called the information foot-path. It is not even
>a dirt-road yet!

Your analogy isn't too far off. But if you want higher speed, you CAN go
and buy it. Your telephone provides clear, full-duplex connectivity to
basically the entire world, and folks are routinely doing 28.8 kbps over it.
But that doesn't stop most of us from "playing radio."

>privilege of having an ethernet connection (10 megabits/sec)
>into the Internet at work. It is amazing to watch the WWW

Your desktop machine may have 10Mbps to your local router, but I doubt
your router (that every bit to/from the Internet must go through) has
anywhere near that. If you're lucky you may have a T1 (1.5 Mbps).

>This all makes the prospects for Packet Radio seem pretty dismal
>but things may not be all that bad. There are some inherent
>advantages to using radio links instead of wire links. These
>advantages must be fully defined and exploited by the Amateur
>Radio community if Packet Radio is to survive.

True. Many of the advantages ARE being exploited.

>We are still stuck for the most part at 1200 baud. Very few

Not true. We're not stuck there. Yes, the majority of packet ops haven't
ventured beyond 1200, but many have. And many more will.

>be stuck at 1200 baud forever. Perhaps some time in the future
>cheap high speed radios will become available, something like

Haven't you heard of the TEKK KS-900? It will do 9600 right out of the
box and sells for $120 (or less, if you hunt around). And synthesized
rigs for 2m and 70cm are coming out with "9600 ready" data ports.

>I have fairly seriously considered converting the primary 145.010
>1200 baud node serving El Paso, TX (ELP:N5RG-1) to 19.2 Kbaud.
>But this would be a drastic change and I expect a cry of anguish
>would arise from the users. In the long run it would be an
>improvement but the initial reaction would most likely be strongly
>negative.

>input on 145.03. So most of the 1200 baud only users could still
>access ELPNET even if the 145.01 node located on the mountain top
>were changed to 19.2 Kbaud (would probably change frequency to
>144.99 MHz).

It's good that you're looking at user access at >1200 bps speeds. Right
now I think the majority of the >1200 bps ports in use are backbone only,
which doesn't let the "common user" see (first-hand) the speed of 9600.

David, N0OXH, rush@erg.sri.com

44. Where to find ITU-T IN standards

From: roberts@ses6a.bt.co.uk
Date: Tue, 7 Mar 1995 14:55:15 +0000
To: netsig@tapr.org
Message-ID: <199503071923.NAA01701@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

It is the Q.1200 series of standards

Connect to gopher://info.itu.ch/11
Click on 'ITU Telecmmunications Standards Sector'
Click on 'Recommendations'
Click on 'Series Q'
Look at the titles of the documents to find the ones you want.
voila

Easiest place to start is Q.1201 - principles of IN Architectures

Dave

45. Forward: RE: [NETSIG:1039] Re: What is an IN (was TAPR [1009])

From: tmoulton@ram.net
Date: Tue, 07 Mar 95 14:21:27 EST
To: netsig@tapr.org (netsig (tapr))
Message-ID: <15021573.196f@ram.net>
Rendered body type: text/plain

For others who are interested.
------- Redirected Message -------

From: roberts@ses6a.bt.co.uk
To: tmoulton@ram.net
Subject: RE: [NETSIG:1039] Re: What is an IN (was TAPR [1009])
Date: Tue, 7 Mar 1995 14:55:02 +0000
Reply-To: roberts@ses6a.bt.co.uk

It is the Q.1200 series of standards

Connect to gopher://info.itu.ch/11
Click on 'ITU Telecmmunications Standards Sector'
Click on 'Recommendations'
Click on 'Series Q'
Look at the titles of the documents to find the ones you want.
voila

Easiest place to start is Q.1201 - principles of IN Architectures

Dave

46. Re: [NETSIG:1040] Re: Amateur Packet Radio: a foot-path

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Tue, 7 Mar 1995 13:33:34 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503072133.NAA02046@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> >I suggest should be called the information foot-path. It is not even
> >a dirt-road yet!
>
> Your analogy isn't too far off. But if you want higher speed, you CAN go
> and buy it. Your telephone provides clear, full-duplex connectivity to
> basically the entire world, and folks are routinely doing 28.8 kbps over it.
> But that doesn't stop most of us from "playing radio."

Quite true.

One big advantage we have is a lot of available spectrum for true high
speed (>1mbps) data. As more wireless LAN equipment comes out at ham
frequencies and close, we may be able to put this to good use.

> >privilege of having an ethernet connection (10 megabits/sec)
> >into the Internet at work. It is amazing to watch the WWW
>
> Your desktop machine may have 10Mbps to your local router, but I doubt
> your router (that every bit to/from the Internet must go through) has
> anywhere near that. If you're lucky you may have a T1 (1.5 Mbps).

And this is how it should be. In the rest of the world, the LAN has the
speed. The most important data is kept within the LAN. Because of this,
most traffic is local.

Right now, ham 1200 baud packeteers like to DX a lot. It's a ham
tradition, and it's "new and novel" for many. And of course, one of the
biggest attractions of ham radio is "Work the World", so it's hardly
surprising that we as a collective group favor DX.

1200 baud was adequate when there were few packeteers, and all we wanted
to do was rtty to one another and send short email notes. It was even OK
for SMALL files. But with ever growing packet populaces and demands for
services, 1200 is proving inadequate to the point of actually
discouraging serious digital types from the service.

If we could duplicate the LAN/WAN model cited above (10 mbps LAN/1 mbps
WAN), we would have plenty of capacity (well, for a while :-)

> >We are still stuck for the most part at 1200 baud. Very few
>
> Not true. We're not stuck there. Yes, the majority of packet ops haven't
> ventured beyond 1200, but many have. And many more will.
>
> >be stuck at 1200 baud forever. Perhaps some time in the future
> >cheap high speed radios will become available, something like
>
> Haven't you heard of the TEKK KS-900? It will do 9600 right out of the
> box and sells for $120 (or less, if you hunt around). And synthesized
> rigs for 2m and 70cm are coming out with "9600 ready" data ports.
>
> >I have fairly seriously considered converting the primary 145.010

> >1200 baud node serving El Paso, TX (ELP:N5RG-1) to 19.2 Kbaud.
> >But this would be a drastic change and I expect a cry of anguish
> >would arise from the users. In the long run it would be an
> >improvement but the initial reaction would most likely be strongly
> >negative.
>
> >input on 145.03. So most of the 1200 baud only users could still
> >access ELPNET even if the 145.01 node located on the mountain top
> >were changed to 19.2 Kbaud (would probably change frequency to
> >144.99 MHz).
>
> It's good that you're looking at user access at >1200 bps speeds. Right
> now I think the majority of the >1200 bps ports in use are backbone only,
> which doesn't let the "common user" see (first-hand) the speed of 9600.
>
> David, N0OXH, rush@erg.sri.com

Absolutely. I've ALWAYS pushed 9600 baud as a USER mode. It REALLY
doesn't take a technical genius to get it going - just follow
instructions, and ask for help if/when needed. There are plenty of
people in the ham community who understand radio function well enough to
help out when one runs into a problem.

The aforegoing does not really apply to those using TEKKs and Kantronics
D410's. these rigs are plug, tweak, and play. Anyone who knows what
they're supposed to can connect up one of these and have it working in
maybe 30 minutes (taking time out for coffee :-) Most modems require
either nothing or just minor adjustments for receiver, and setting TXA
can be as simple as setting the 9600 "noise" so it's just a little softer
than open squelch on your HT.

I know some will argue this, but it's no more than what legally should be
done to install 1200 baud. And yes, I said "legally", because it is
illegal to jam so much audio into your 2m FM rig that it distorts and
sends out a signal covering two channels either side of you. 1200 baud
sometimes will work like this (albeit not well), but 9600 baud won't.

Many potential 9600 users are intimidated by horror stories of those
trying to do 9600 baud the hard way - use radios never intended for FSK
data. Many more are put off because some IMHO unscrupulous manufacturers
have marketed rigs that are supposed to do 9600 baud but do it so poorly
as to be worthless.

But I think the biggest obstacle is political, not technical - a lack of
user channels for 9600 baud. In many areas, all frequencies on 2 meters,
440 mHz, etc., are "being used", and 9600 baud is not welcome. Existing
users don't want to move or convert.

Even if there are no current users, setting aside a "9600 baud ghetto"
frequency is a great start. Putting a connected network resource there
is even better. Either a BBS or NOS switch, with a port into the local
backbone, is good. And if you have never tried a BBS at 9600 baud,
you're in for a real treat! We have one local who hates tcp/ip, but even
after several of years is still ecstatic about 9600 baud BBSing.

Once you have a critical user mass, it's a lot easier to "convert" other
channels to 9600.

 -- mike

47. Re: using Kantronics KPC-9612 at 9600bps

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Tue, 7 Mar 95 16:16:46 -0700
To: faster@ve7frg.ampr.org, netsig@tapr.org, tcp-group@ucsd.edu
Message-ID: <9503072316.AA00352@n.kb7eec.ampr.org>
Rendered body type: text/plain

Thanks a bunch for the replies! The problem was guessed by Walter Holmes, and
here is part of his reply:

From: WHolmes@ix.netcom.com (Walter Holmes)
...
  This may be a silly question, but have you placed the radio into the

9600 baud mode yet ? ie.. pressing F + STEP to display the 9600 baud

symbol. The reason I ask, is that I tried my 733 and 9612 for about 2

hours before I found that bit of data. It seemed to receive the packets

fine, but would not transmit the data correctly.

Now, after enabling 9600bps on the radio, the Kantronics KPC-9612 works with the Kenwood TM-733A at 9600bps. It is actually the equipment of Danny.Hua@m.cc.utah.edu, so please do e-mail Danny and I if you want to find out more. I myself am not sure how small of a TXDELAY we are able to use with the Kenwood radio. The radio that I dedicate to 9600bps packet is a TEKK KS-960, and it is fast enough to use a 70ms TXDELAY.

Other related info:
For the case of my Standard C5718DA radio, I not only cannot use a TXDELAY under about 300ms, but the transmit-to-receive switching time of the Standard is not fast enough to receive "quick" replies from other stations on the existing 9600bps network here in Salt Lake. That is a fairly serious problem that the Kenwood does not seem to have, and it is one thing on a list of 4 problems that my Standard has been sent to service to fix (but otherwise I like the C5718DA).

I hope my query and this reply was appropriate for the lists I sent it to; I personally would rather discuss things like Internet gateway design and routing protocols in the tcp-group list, but thanks for the info and 73.

Gary

48. BPQ Question/Answer

From: jkbe@aluxs.att.com (John Bednar)
Date: Wed, 8 Mar 95 11:24:41 EST
To: netsig@tapr.org
Message-ID: <9503081624.AA06654@lena>
Rendered body type: text/plain

Thanks to all that responded to my question of locking out
nodes with BPQ. Daniel, N7MRP suggest a solution that
worked!

I plan to send a letter to G8BPQ asking for more node and routes
features. Maybe others would like to do the same.

John, WB3ESS

49. (no subject)

From: jury@ACM.ORG (Angela C Jury)
Date: Wed, 08 Mar 1995 23:27:47 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HNWT5KXBVA00EV4N@ACM.ORG>
Rendered body type: text/plain

Hello, I'm trying to find the list of mod's to get a Motorola Mocom 70 up on
9600 baud.
Thanks for your help.

Angela C Jury
jury@acm.org
#include <Std.Disclaimer>

50. Re: Using the Kantronics Data Engine with the Yaesu FT-5100

From: parasram@home.uwi.tt
Date: Wed, 8 Mar 95 22:53:53 PST
To: faster@ve7frg.ampr.org, netsig@tapr.org, tcp-group@UCSD.EDU
Message-ID: <Chameleon.950308231235.PARASRAM@ldc.ppp>
Rendered body type: text/plain

Hello to all from Trinidad (The University of the West Indies) from Ryan Parasram

My problems are as follows :

1.	I am using a DE19K2/9K6 Modem in the Kantronics Data Engine at 9600 baud. I would like to know the jumper settings on the modem (JP1, JP2, JP3, JP4) for a Yaesu FT-5100.
2.	On contacting Yaesu, I was told that the jack at the back of the radio may be used for only 9600 baud packet operation; not 1200 baud (this was not stated in the manual). What I would like to know is, has anyone ever tried operating at 9600 baud with this jack? And did it work? If it didn't initially, what mods were required ?
3.	In JNOS110h, my SMTP client only works if an MTU of 128 is defined. Does anyone else have

this problem or it just me ?

Thanking all in advance for your time and helpful responses.

BYE !

51. What's needed to get on the air?

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 09 Mar 95 08:52:20 EST
To: netsig@tapr.org (netsig (tapr))
Message-ID: <15021573.1980@ram.net>
Rendered body type: text/plain

If I have a LAN at home (I have both Lantastic and Windows for Work Groups)
what else do I need to be able to extent my lan to the LAN? (ie RF)

tom

52. ITU Q.12xx - IN Specs

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 09 Mar 95 09:18:37 EST
To: netsig@tapr.org (netsig (tapr)), tnc-tng@lantz.com (TNC Next Generation)
Message-ID: <15021573.1981@ram.net>
Rendered body type: text/plain

I have the Postscript files of the IN specs.

I am starting to look at them.

If you would like the postscript files I can ZIP/uuencode and email them.
direct email requests please. w2vy@ram.net

The PS files are 14mb, the zip file is 3mb

It will take me some time to look through them.

Tom

53. RE: [NETSIG:1029] NETSIG digest 143

From: "Battles, Brian, WS1O" <bbattles@arrl.org>
Date: Thu, 09 Mar 95 11:57:00 EST
To: netsig <netsig@tapr.org>
Message-ID: <2F5F33C9@arrl.org>
Rendered body type: text/plain

> ------------------------------
 > Date: Fri, 3 Mar 95 17:51:43 -0700
 > From: Gary Crum <crum@n.kb7eec.ampr.org>
 >
 > I'm connecting a ... TNC to a ... radio for
 > 9600-bps packet operation...

  Hoo, boy--wait till you see the article by Jon Bloom, KE3Z, on how a
variety of commercial 2-meter FM transceivers work when attempting to run
9600-bit/s packet! Jon did an exhaustive series of careful tests in the ARRL
Labs. Watch for May '95 QST.

54. Re: [NETSIG:1050] RE: NETSIG digest 143

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 9 Mar 1995 11:47:59 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199503091748.LAA22096@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Great News Brian. I have been trying to find someone with the equipment,
time, and could do the test -- Jon is a perfect person.

I bet we find none are 100% and maybe one or two almost work.

Greg

According to Battles, Brian, WS1O:
>
>
> > ------------------------------
> > Date: Fri, 3 Mar 95 17:51:43 -0700
> > From: Gary Crum <crum@n.kb7eec.ampr.org>
> >

> > I'm connecting a ... TNC to a ... radio for
> > 9600-bps packet operation...
>
>   Hoo, boy--wait till you see the article by Jon Bloom, KE3Z, on how a
> variety of commercial 2-meter FM transceivers work when attempting to run
> 9600-bit/s packet! Jon did an exhaustive series of careful tests in the ARRL
> Labs. Watch for May '95 QST.
>

55. Re: Using the Kantronics Data Engine with the Yaesu FT-5100

From: bruce@pixar.com (Bruce Perens)
Date: Thu, 9 Mar 95 11:07 PST
To: tcp-group@UCSD.EDU, netsig@tapr.org, faster@ve7frg.ampr.org,
        parasram@home.uwi.tt
Message-ID: <m0rmnYw-0005uPC@mongo.pixar.com>
Rendered body type: text/plain

From: parasram@home.uwi.tt
> 2. On contacting Yaesu, I was told that the jack at the back of the
> radio may be used for only 9600 baud packet operation; not 1200 baud
> (this was not stated in the manual).

You _can_ use 9600 inputs and outputs for 1200 baud packet _if_ your
TNC is capable of running open-squelch, if it has sufficient drive to
drive the varactor directly instead of driving a microphone input, and
if it can disable the equalization it uses to get around the pre-emphasis
and de-emphasis of a voice radio.

The 9600 output generally comes straight from the discriminator and
bypasses the squelch, audio shaping, and amplification. The 9600 input
generally goes straight to the varactor diode and bypasses all audio
shaping, amplification, compression and limiting.

I've been using a TAPR-DCD-modified PK-88 with a 9600-modified Alinco
DR-1200 for a year now. It decodes packets better, and its transmissions
are less distorted, than if I simply connected to the microphone and
speaker outputs.

        Bruce
--
Bruce Perens AB6YM 510-215-3502 Bruce@Pixar.com

Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.rahul.net/perens/LinuxForHams

56. RE: NETSIG digest 143

From: jra1854@tntech.edu (Jeffrey Austen)
Date: Thu, 09 Mar 1995 14:24:41 -0600
To: netsig@tapr.org
Message-ID: <01HNXOKEV5BMDLM436@tntech.edu>
Rendered body type: text/plain

> Hoo, boy--wait till you see the article by Jon Bloom, KE3Z, on how a
>variety of commercial 2-meter FM transceivers work when attempting to run
>9600-bit/s packet! Jon did an exhaustive series of careful tests in the ARRL
>Labs. Watch for May '95 QST.

I'm looking forward to seeing the article!

But...I'd like to know just how accurately these tests can be run when
there is no standard for the transmitted signal. In this case the tests
must be quite exhaustive (and exhausting) as every possible combination of:
  (1) transmit modem (and waveform if more than one is available)
  (2) radio transmitter
  (3) peak frequency deviation
  (4) radio receiver
  (5) receiving modem
must be considered. After all that, don't forget to test it with carrier
frequency offsets so as to represent a realistic environment.

My point? We still haven't standardized the 9600 b/s waveform. It needs
to be done. The standard must be written to describe the transmitter
output signal; there is no other way to make a broadcast-type network work.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004

+1 615 372 3485 | Cookeville Tennessee 38505 U.S.A.

57. Re: [NETSIG:1053] RE: NETSIG digest 143

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Thu, 9 Mar 1995 13:21:30 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503092121.NAA07746@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> But...I'd like to know just how accurately these tests can be run when
> there is no standard for the transmitted signal. In this case the tests
> must be quite exhaustive (and exhausting) as every possible combination of:
> (1) transmit modem (and waveform if more than one is available)
> (2) radio transmitter
> (3) peak frequency deviation
> (4) radio receiver
> (5) receiving modem
> must be considered. After all that, don't forget to test it with carrier
> frequency offsets so as to represent a realistic environment.

IMHO, you're needlessly complicating the equation. 9600 baud FSK simply isn't _that_ demanding. In fact, it oftentimes amazes me how well it works with the poorly designed (for data) radios we try to do it with.

The transmit waveform isn't as much the problem as the phase relationship of transitions. Yes, they're similar, but not the same. The ideal transmitter and receiver would be replaceable by copper wire with appropriate signal attenuation.

Peak deviation is standardized @ +/- 3 kHz. IF passbands keep us honest on this one :-)

The modem transmitter should take TTL 9600 baud and convert it into a perfect 4800 half sine based randomized NRZI, containing absolutely no energy beyond 4800 Hz. The modem receiver should theoretically take a perfect 4800 Hz sinewave based signal (9600 baud is done using half cycles of 4800 Hz sine wave, taking the transitions or lack thereof as bit states) and convert it back to 9600 baud TTL.

These are the more or less "accepted standards".

One could quantify modems by measuring their ability to adhere to this on transmit, and accept signals deviating from this on receive and successfully demodulate them.

As far as frequency offsets (FSK has no actual "carrier" - we use + 3 kHz and - 3 kHz only), those running 9600 will have to keep their stuff reasonably well aligned. There's no way around this that I'm aware of. If you drift off more than a kHz or so, you're incommunicado. I've found this to be a very powerful enforcer of tuneup clinics and freq counters :-)

Even with el cheapo TEKK crystals, freq tweak every 6 months or so is usually sufficient. If you have a mountaintop unit accessible only on foot using Sherpa guides, etc., invest in better quality crystals.

> My point? We still haven't standardized the 9600 b/s waveform. It needs
> to be done. The standard must be written to describe the transmitter
> output signal; there is no other way to make a broadcast-type network work.

The best standard is the ideal. Stick as closely to it as possible and you can't go wrong.

The k9ng modem has no waveform adjustment. TAPR and g3ruh modify the transmit waveform. DRSI modifies receive waveform optionally - this can be easily bypassed with no big problems. Others may well have their own way of doing things. Choosing one arbitrarily as a basis for standardization is inherently flawed. "Perfection" is the best standard, and in this case is entirely reasonable.

-- mike

58. RE: NETSIG digest 143

From: jra1854@tntech.edu (Jeffrey Austen)
Date: Thu, 09 Mar 1995 16:44:26 -0600
To: netsig@tapr.org
Message-ID: <01HNXTFNFJWIDLLOJ4@tntech.edu>

Rendered body type: text/plain

Mike Curtis <wd6ehr@kaiwan.com> writes:
>The modem transmitter should take TTL 9600 baud and convert it into a
>perfect 4800 half sine based randomized NRZI, containing absolutely no
>energy beyond 4800 Hz.

That is an oxymoron. A "half sine based" signal must contain energy beyond
4800 Hz. Even worse, there is an implied assumption that the modulator is
linear (e.g., if we limit the spectrum to 4800 Hz at the input the output
spectrum will be only 9600 Hz wide) which is NOT TRUE. I repeat, NOT TRUE.
FM is nonlinear modulation and with a maximum frequency of 4800 Hz and
peak frequency deviation of 3000 Hz we are certainly way outside the
classic narrow band assumption.

>The modem receiver should theoretically take a
>perfect 4800 Hz sinewave based signal (9600 baud is done using half cycles
>of 4800 Hz sine wave, taking the transitions or lack thereof as bit
>states) and convert it back to 9600 baud TTL.

No. You are ignoring the effect of the filter in the receiver IF. That
changes the waveform and affects the signal to noise ratio. You can't
approach optimum BER without taking that into account.

>These are the more or less "accepted standards".

True, but a "more or less" accepted standard is not a standard. Nor is the
fact that "it works" a justification for sloppy engineering. We can and
should do better.

>The best standard is the ideal. Stick as closely to it as possible and
>you can't go wrong.
>
>The k9ng modem has no waveform adjustment. TAPR and g3ruh modify the
>transmit waveform. DRSI modifies receive waveform optionally - this can
>be easily bypassed with no big problems. Others may well have their own
>way of doing things. Choosing one arbitrarily as a basis for
>standardization is inherently flawed. "Perfection" is the best standard,
>and in this case is entirely reasonable.

What is "the ideal" and what is "perfection"? Communications system
design, like everything else in the world, involves compromise. You can't
have best energy efficiency, best bandwidth efficiency, lowest bit error
rate and lowest cost all at the same time.

I'm not saying that we need to throw out all the existing equipment. In
fact, any standard which is developed at this point must take compatibility
into account. What we need to do is to look to the future, anticipate a
"digital radio" which has the modem built-in and determine exactly what
signal the transmitter will output. Once that is determined new receivers
can be designed to be compatible with that signal (and all existing
variations), with better (i.e., more expensive) receivers having superior
performance as compared to others. If the signal is not specified how can
we design the "best" receiver? Maybe if this is done the manufacturers
will be more inclined to produce a decent radio for packet.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
+1 615 372 3485 | Cookeville Tennessee 38505   U.S.A.

59. info

From: techman@ace.com (Techman)
Date: Fri, 10 Mar 95 02:34:17 EST
To: netsig@tapr.org
Message-ID: <9503100234.0.UUL1.3#25274@ace.com>
Rendered body type: text/plain

subscribe

60. Re: [NETSIG:1055] RE: NETSIG digest 143

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Fri, 10 Mar 1995 00:49:09 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503100849.AAA04600@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> Mike Curtis <wd6ehr@kaiwan.com> writes:
> >The modem transmitter should take TTL 9600 baud and convert it into a
> >perfect 4800 half sine based randomized NRZI, containing absolutely no
> >energy beyond 4800 Hz.
>
> That is an oxymoron. A "half sine based" signal must contain energy beyond
> 4800 Hz. Even worse, there is an implied assumption that the modulator is
> linear (e.g., if we limit the spectrum to 4800 Hz at the input the output
> spectrum will be only 9600 Hz wide) which is NOT TRUE. I repeat, NOT TRUE.
> FM is nonlinear modulation and with a maximum frequency of 4800 Hz and
> peak frequency deviation of 3000 Hz we are certainly way outside the
> classic narrow band assumption.

I wasn't clear on this. My modem "transmitter" is not RF yet. It's the
output from the MODEM. Let's call it TX AUDIO instead. the highest
frequency component in a 9600 baud half sine NRZI signal (not RF) is 4800
hertz. I assumed anyone familiar with 9600 baud packet would know this
referred to TXA, and so wasn't as careful with the phrasing as I should
have been.

Using Carsons Rule:

9600 baud @ 3 kHz dev is (4800 Hz * 2 + 3 kHz dev * 2)= 15.6 kHz wide.

Actual measurements show very little energy beyond 12 kHz.

> >The modem receiver should theoretically take a
> >perfect 4800 Hz sinewave based signal (9600 baud is done using half cycles
> >of 4800 Hz sine wave, taking the transitions or lack thereof as bit
> >states) and convert it back to 9600 baud TTL.
>
> No. You are ignoring the effect of the filter in the receiver IF. That
> changes the waveform and affects the signal to noise ratio. You can't
> approach optimum BER without taking that into account.

Yes I am ignoring the effects of the IF filter. First, we're dealing with
an idealized device in my discussion, just like the isotropic antenna or
the "perfect preamp" (straight wire with gain) Secondly, there are IF
filters available that approach this theoretical model a lot more closely
than typical communications quality filters as used in typical amateur
gear. Write to MuRata for specs on their SFG455 and SFH455 lines of
digital filters (and yes, they have them @ 455 kHz IF, regardless of what
EEM and some of MuRatas sales people might say. I have physical samples
in my possession.) These are spec'd at "negligible ripple" or something
like that. I've personally tested these, and gotten good BER's from their
6.5 kHz @ -6dB models, although tuning is excruciatingly critical.

> >These are the more or less "accepted standards".
>
> True, but a "more or less" accepted standard is not a standard. Nor is the
> fact that "it works" a justification for sloppy engineering. We can and
> should do better.

How?

> >The k9ng modem has no waveform adjustment. TAPR and g3ruh modify the
> >transmit waveform. DRSI modifies receive waveform optionally - this can
> >be easily bypassed with no big problems. Others may well have their own
> >way of doing things. Choosing one arbitrarily as a basis for
> >standardization is inherently flawed. "Perfection" is the best standard,
> >and in this case is entirely reasonable.
>
> What is "the ideal" and what is "perfection"? Communications system
> design, like everything else in the world, involves compromise. You can't
> have best energy efficiency, best bandwidth efficiency, lowest bit error
> rate and lowest cost all at the same time.

As I understood, the topic was "9600 baud packet". What I have enumerated
above is the way it is currently being done. Is it the best way? It
makes a lot more sense for amateur radio than various landline modem
modulation schemes. Is it the most efficient in energy and bandwidth? Of
course not. FM never is, when you look purely at numbers. Of course,
when you factor in capture effect and such, then the tune changes ;-)

> I'm not saying that we need to throw out all the existing equipment. In
> fact, any standard which is developed at this point must take compatibility
> into account. What we need to do is to look to the future, anticipate a
> "digital radio" which has the modem built-in and determine exactly what

If we're going to this trouble, why limit it to 9600 baud. Why not add a
few zeroes after it. 9600 baud is "slow speed" data. 9600 baud is a
stopgap, not an end. If I'm going to spend money on a digital radio (I
assume you refer to DSP), I want a LOT more than 9600 baud for the kind of
money that's going to cost.

> signal the transmitter will output. Once that is determined new receivers
> can be designed to be compatible with that signal (and all existing
> variations), with better (i.e., more expensive) receivers having superior
> performance as compared to others. If the signal is not specified how can
> we design the "best" receiver? Maybe if this is done the manufacturers
> will be more inclined to produce a decent radio for packet.

Using proper filters is the key. Good digital mode optimized filters are
available. But even cheap audio grade filters work.

Receivers are not the problem. Cheap PLL modulation is far more a factor.
Reference: Alinco DR-1200t. It hears fine, but can't talk to others
nearly as well as it hears. Also, T/R and R/T delay is 180 mSec, mainly
due to PLL lock time, due to the PLL modulator being required to pass
9600 bauds 283 Hz (remember the 17 bit tapped@12 shift register :-) to
4800 Hz signal linearly.

 -- mike

61. RE: NETSIG digest 143

From: jra1854@tntech.edu (Jeffrey Austen)
Date: Fri, 10 Mar 1995 10:50:11 -0600
To: netsig@tapr.org
Message-ID: <01HNYVCTCPG2DLM8RD@tntech.edu>
Rendered body type: text/plain

>> Mike Curtis <wd6ehr@kaiwan.com> writes:
>> >The modem transmitter should take TTL 9600 baud and convert it into a
>> >perfect 4800 half sine based randomized NRZI, containing absolutely no
>> >energy beyond 4800 Hz.
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>> 4800 Hz. Even worse, there is an implied assumption that the modulator is
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>> FM is nonlinear modulation and with a maximum frequency of 4800 Hz and
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>output from the MODEM. Let's call it TX AUDIO instead. the highest
>frequency component in a 9600 baud half sine NRZI signal (not RF) is 4800
>hertz. I assumed anyone familiar with 9600 baud packet would know this
>referred to TXA, and so wasn't as careful with the phrasing as I should
>have been.

What I believe you are referring to is called the raised cosine spectrum
(often misstated as a raised cosine pulse) which has the property that the
spectrum is lowpass. Unfortunately, the example of sending data at 9600
b/s with a baseband spectrum of 4800 Hz using this waveform shaping is
impossible. Under this condition the pulse degenerates into a sinc pulse
which (a) is not time limited (but in practice it can be truncated after
sufficient delay) and more importantly (b) the intersymbol interference
causes synchronization at the receiver to be impossible. Increasing the
bandwidth is necessary to avoid this problem.

Note that the system is still nonlinear. You just can't design the "modem"
output without taking into account the fact that it will be frequency
modulated.

>Using Carsons Rule:
>
>9600 baud @ 3 kHz dev is (4800 Hz * 2 + 3 kHz dev * 2)= 15.6 kHz wide.
>
>Actual measurements show very little energy beyond 12 kHz.

No problem. Carson's rule is an approximation. I'm not arguing that the
current system doesn't work. What I'm saying is that there are some "loose
ends" that need to be dealt with.

>> >The modem receiver should theoretically take a

>> >perfect 4800 Hz sinewave based signal (9600 baud is done using half cycles
>> >of 4800 Hz sine wave, taking the transitions or lack thereof as bit
>> >states) and convert it back to 9600 baud TTL.
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>> No. You are ignoring the effect of the filter in the receiver IF. That
>> changes the waveform and affects the signal to noise ratio. You can't
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>Yes I am ignoring the effects of the IF filter. First, we're dealing with
>an idealized device in my discussion, just like the isotropic antenna or
>the "perfect preamp" (straight wire with gain) Secondly, there are IF
>filters available that approach this theoretical model a lot more closely
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>EEM and some of MuRatas sales people might say. I have physical samples
>in my possession.) These are spec'd at "negligible ripple" or something
>like that. I've personally tested these, and gotten good BER's from their
>6.5 kHz @ -6dB models, although tuning is excruciatingly critical.

You can do anything in the receiver you want -- it doesn't affect the
signal that goes out over the air, it'll just affect how well you receive
data. Somebody else, however, might want to pay a few more dollars for a
receiver that performs better. What needs to be defined is the transmitted
signal.

>> >These are the more or less "accepted standards".
>>
>> True, but a "more or less" accepted standard is not a standard. Nor is the
>> fact that "it works" a justification for sloppy engineering. We can and
>> should do better.
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>How?
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>> >The k9ng modem has no waveform adjustment. TAPR and g3ruh modify the
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>above is the way it is currently being done. Is it the best way? It
>makes a lot more sense for amateur radio than various landline modem
>modulation schemes. Is it the most efficient in energy and bandwidth? Of
>course not. FM never is, when you look purely at numbers. Of course,
>when you factor in capture effect and such, then the tune changes ;-)

Bzzzzzt! Wrong answer. M-ary orthogonal FSK with large M, which is a form
of frequency modulation, has the best energy efficiency. Take a look at
what NASA uses on its deep space probes and why they use it.

>> I'm not saying that we need to throw out all the existing equipment. In
>> fact, any standard which is developed at this point must take compatibility
>> into account. What we need to do is to look to the future, anticipate a
>> "digital radio" which has the modem built-in and determine exactly what
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>stopgap, not an end. If I'm going to spend money on a digital radio (I
>assume you refer to DSP), I want a LOT more than 9600 baud for the kind of
>money that's going to cost.
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>available. But even cheap audio grade filters work.
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>Reference: Alinco DR-1200t. It hears fine, but can't talk to others
>nearly as well as it hears. Also, T/R and R/T delay is 180 mSec, mainly
>due to PLL lock time, due to the PLL modulator being required to pass
>9600 bauds 283 Hz (remember the 17 bit tapped@12 shift register :-) to
>4800 Hz signal linearly.

I think that we agree here. What I'm saying is that the transmitted signal
needs to be standardized. What you're saying is that various transmitters
have problems, mainly because of the PLL filter. If we had a standard,
written down on paper, isn't it true that the manufacturers could design in
the appropriate compensation and wave shaping. Even better yet, they could
build the "modem" into the radio so that users wouldn't have to deal with
radio modifications, making custom cables and setting analog levels
properly? The total cost would be the same, or maybe even lower, and the
system would be a lot easier to get working.

SUMMARY

In a broadcast medium, to insure interoperability, the transmitter output
signal must be defined. How the transmitter meets that specification is
irrelevant as long as it meets it. What the receiver does with the signal
is irrelevant except to the person paying for the receiver -- it doesn't
affect other users of the medium.

What we haven't done is to finish defining the transmitter output, in
particular the exact pulse shape that is used. The current anarchy (I
believe that I counted about 40 different pulse shapes when I looked into
it - ignoring transmitter frequency response effects) seems to work in
practice but there is room for improvement. When this is done it will be
possible to design receivers that perform better than any of the current
receivers.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
+1 615 372 3485 | Cookeville Tennessee 38505   U.S.A.

62. Mitreck mods.

From: n8nxf@hamgate.merit.edu
Date: Fri, 10 Mar 95 14:24:21 EST
To: netsig@tapr.org
Message-ID: <9773@hamgate.merit.edu>
Rendered body type: text/plain

Can anyone point me in the direction to find info. on: 1) Bringing
a Motorola Mitreck (T44JJA3900DK) UHF (450 - 560 z) into the
440 MHz ham band. 2) What I need to do for data operation @ 9,600
baud or better. (BTW, I have the service manuals & schematics)
  KLaus

63. [NETSIG:1059] Mitreck mods. -Reply

From: Orville Beach <Orv@micom.com>
Date: Fri, 10 Mar 1995 14:07:00 -0800
To: netsig@tapr.org
Message-ID: <sf605e96.053@micom.com>
Rendered body type: text/plain

>>> <n8nxf@hamgate.merit.edu> 03/10/95 12 27pm >>>
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on: 1) Bringing a Motorola Mitreck (T44JJA3900DK)
UHF (450 - 560 z) into the
440 MHz ham band. 2) What I need to do for data
operation @ 9,600 baud or better. (BTW, I have the
service manuals & schematics)
  KLaus

==========

Klaus, Mel, K0PFX wrote up some mods for 9600 baud
operation on 70 cm Mitreks.

You might be able to to get an electronic copy of
them from him.

As I recall, his internet address is mel@mo.net

If you can't raise him that way, let me know and
I'll give you his landline number.

73 - Orv - wb6wey
==========
Orville Beach
Network Manager
MICOM Communications Corp.
Simi Valley, California
orv@micom.com
==========

64. Information on PacComm.....

From: "Brian A. Lantz" <brian@lantz.com>
Date: Fri, 10 Mar 1995 16:58:40 +0000
To: TCP Group Mailing List <tcp-group@ucsd.edu>
Cc: NOS BBS Mailing List <nos-bbs@hydra.carleton.ca>,
TAPR NETSIG Mailing List <netsig@tapr.org>,
TAPR BBSSIG Mailing List <bbssig@tapr.org>,
TNOS Topics Mailing List <tnos-topics@lantz.com>
Message-ID: <Pine.3.89.9503101654.A25894-0100000@lantz.com>
Rendered body type: text/plain

I was asked by PacComm to drop a line here, and let you know that they
are "alive and well". It seems that some new construction in their area
severed a major telephone line(s) and they are cut off from the world, by
phone, at least.

If you called them and didn't get an answer, don't worry. It wasn't just
you! They hope that it will be fixed by Monday.

Their Internet link (by phone) is also down, but email to paccomm.com
gets properly held for them at their Mail Exchanger, lantz.com.

Brian A. Lantz brian@lantz.com

REAL PORTION of Microsoft Windows code:

```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

65. (no subject)

From: jury@ACM.ORG (Angela C Jury)
Date: Fri, 10 Mar 1995 22:07:08 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HNZIX9SNUE00GQOT@ACM.ORG>
Rendered body type: text/plain

Hello, does anyone have info on 9600 baud for a Motorola micor UHF and a
MFJ-1270C?
Thanks for your help.

Angela C Jury
jury@acm.org
#include <Std.Disclaimer>

66. Re: [NETSIG:1062]

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sat, 11 Mar 1995 05:49:16 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950311054530.8004B-100000@acca>
Rendered body type: text/plain

On Fri, 10 Mar 1995, Angela C Jury wrote:

> Hello, does anyone have info on 9600 baud for a Motorola micor UHF and a
> MFJ-1270C?
> Thanks for your help.
> -----
> Angela C Jury
> jury@acm.org
> #include <Std.Disclaimer>
>
>

Angela send a message to wy5g@astro.wnm.edu who is Danny and ask
him your questions. I know that Danny has or was running a Mocom and MFJ
on 9600 baud. My suggestion would be to buy a newer radio. The Mitrex
radio has been available to Hams for some time now.

```
 ****************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory             *
 *                                                                           *
 ****************************************************************************
```

67. micor & mfj-1270c

From: "Ed Maling" <TEDHM@chevron.com>
Date: 11 Mar 95 12:52:11 PST
To: netsig@tapr.org
Message-ID: <HOVMB.TEDHM.9408.1995 0311 12 48 12 48>
Rendered body type: text/plain

To: OAS   --SSW1   OPEN ADDRESSING SE

FROM: Ed Maling
      Chevron Info Tech Co
      CSD - Tech Support
SUBJECT: micor & mfj-1270c

Angela C. Jury queried about using Monkeyrola Micor with an
MFJ-1270c. I'd advise she contact David C. Bray (n0its) as
he's the guru on that sort of thing. dcbr@chevron.com
73 de n7mlr

Ed Maling (801)789-9666 (VERUT3)
1275 E. Hwy 40 # 3
Vernal, Ut 84078-2830
edhm@chevron.com

68. [NETSIG:1062]

From: sysop@phx-az.com (Daniel Meredith)
Date: Sun, 12 Mar 1995 01:14:19 GMT
To: netsig@tapr.org
Message-ID: <950311182443243@phx-az.com>
Rendered body type: text/plain

->From: jury@ACM.ORG (Angela C Jury)
->To: netsig@tapr.org
->Date: Fri, 10 Mar 1995 22:19:14 -0600
->Subject: [NETSIG:1062]

->Hello, does anyone have info on 9600 baud for a Motorola micor UHF and a
->MFJ-1270C?
->Thanks for your help.
->-----
->Angela C Jury
->jury@acm.org
->#include <Std.Disclaimer>

This is an updated text file containing the MICOR 9600 Baud operation
modification. The only major changes are the X-TAL filter changes and the
wiring of the first stage of the exciter board "hot." The changes are
noted with a > in front of the text.

First, the MICOR was modified for "stand alone" operation (without a
control head) - on P901 (the big connector in the front), pin 11 is
jumpered to pin 1 (Gnd), pins 8,3 & 22 are connected together and to a
2amp fuse connected to the big A+ feedthru going into the PA. All these
jumpers are done on the control(interconnect) board, except for mounting
the fuse itself. Unless you want speaker audio to listen to, there is
no need to install volume or squelch pots, and the audio amps are not
used in this application.

Second, we did a couple mods that seem to help prevent problems before
they arise: add a capacitor (at least 20 microfarads, I use 220 uf)
across C903 on the control board (this is the tubular electrolytic

located just to the rear of the 9.6v regulator transistor heatsink). Add
a diode (1N4001 or better) from P901 pin 16 to any of the A+ pins
(3,8,18), with the banded end to the A+ pin. (this is a "spike"
suppression diode)

Third, one mod on the Audio/Squelch board: replace C203 with a 1-10uf
electrolytic/tantalum- I recommend at least a 20v rating. This improves
the low frequency end of discriminator audio.

If your radio has a CTCSS encode board plugged into the exciter,
remove it. Install JU304, which is located immediatly adjacent to the
encoder board connection on the exciter. Depending on which exciter you
have, the encoder will have either 7 or 11 pins - in either case the pin
you will use to inject transmit "audio" is the one adjacent to the big
square hole, towards the outside edge of the radio (pin 6 for 7-pin, or
pin 10 for 11-pin ones). Connect a shielded lead from this pin to an
unused pin on P901 (I use pin 27). On the exciter, trace the land from
the pin you just connected to and you will find an 82k resistor -
replace it with a 10k resistor (1/4w) and a 10uf capacitor in series.
(Some exciters already have a 6.8uf cap in series - if you are SURE
yours has the cap, you don't need to add another!

>   On the receiver RF/IF board, remove the SENCOND (2nd) and FOURTH (4th)
> crystal filter "cans" that come after the IF amp, and replace them with
> 1000pf disc caps (not critical). Note that the caps DO NOT connect to the
> center ground pin! This mod is CRUCIAL to making the receiver work at
> 9600!
>
>   The previous mod required the removing of the LAST TWO crystal filter cans
> and after about 6 months of operation, the receiver IF began to oscillate
> badly and thus retries went through the ceiling. The data being
> received was quite jittery on a scope and thus not decodeable. The above ne
> modification has been stable for the past year now, and there have been
> absolutely NO problems since then.
>
>
>   The next step is to wire the first stage of the exciter "hot." Find
> regulated continual 9.6v and apply it to the first stage of the exciter.
> The has allowed for a much quicker key up time. Before this modification it
> was necessary to have longer TXD's to be certain the data was decoded on the
> other end completely. You will find by completing this modification, you
> can operate with a TXD of 8ms and I've even made it work at 5ms. This is
> pretty amazing. On some of the longer paths like I have that contain path
> fades etc. I have found that with the MICOR radios, that a TXD of 12 or 13
> is just right and I have continued to maintain a retry rate of 0-1% for the
> past 2 years now on all links that contain MICOR/MITREK mixes.

Thats ALL there is to it - naturally, you need to tune the radio up,
but I figure you already knew that! Connect your transmit audio to
whichever pin you connected the jumper to, receive audio (discriminator)
is on pin 20, PTT is pin 16, and 12v goes to the two big pins in the
middle (pins A and B).

I would advise obtaining a service manual for these radios if you plan
on using them - it is Motorola part # 68P81015E70, and you should be
able to order one through any Motorola service shop.

The original mod was written by Hartley J. Gardner, W1OQ@N7MRP.AZ.USA.NA
and implemented by Daniel J. Meredith, N7MRP@N7MRP.AZ.USA.NA

The revision to this mod has been worked on by both of the above mentioned
parties and has been revised by Daniel J. Meredith, N7MRP@N7MRP.AZ.USA.NA

Internet:
Hartley J. Gardner - W1OQ@PHX-AZ.COM
Daniel J. Meredith - N7MRP@PHX-AZ.COM

69. Re: [NETSIG:1047] Re: Using the Kantronics Data Engine with the Yaesu FT-5100

From: k0hyd@southwind.net (Dale L. Puckett)
Date: Sat, 11 Mar 1995 23:29:08 -0600
To: netsig@tapr.org
Message-ID: <v01510101ab8835d9297a@[44.122.0.4]>
Rendered body type: text/plain

>I would like to
>know the jumper settings on the modem (JP1, JP2, JP3, JP4) for a Yaesu FT-5100.
>2.   On contacting Yaesu, I was told that the jack at the back of the
>radio >may be used for
>only 9600 baud packet operation; not 1200 baud (this was not stated in the

>>manual). What I would
>like to know is, has anyone ever tried operating at 9600 baud with this
>jack? >And did it work?

I have a Kantronics 9612 and have tried to us it with the FT-5100. After
several months of frustration, I sent both the radio and tnc to Yaesu and
told them to return it when it worked.

They found the problem ... the capacitor that feeds the modulator was the
wrong type. They fixed it and had it on the air in California for several
hours and it didn't miss a lick with the local node there. However, when I
got it back, I still have not been able to make a successful contact with
anyone here in Kansas. We can usually connect put with tcp I wound up with
a 5 percent ping return rate. About the same for ax25. We both had decent
strength signals.

I've tried for two years to get some 9600 baud activity going here but
there is no one here with the test equipment to get it all working.

73 de Dale
INTERNET: k0hyd@southwind.net
AMPR: k0hyd@k0hyd.#scks.ks.usa.noam [44.122.0.4]
WWW: www.southwind.net/~k0hyd
FTP: ftp.southwind.net/u/k/k0hyd
Dale L. Puckett, 23440 West Highway 54,
Goddard, KS 67052 (316-794-2347)

70. Re: [NETSIG:1066] Re: Using the Kantronics Data Engine with the Yaesu FT-5100

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sun, 12 Mar 1995 07:15:23 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950312065702.9253A-100000@acca>
Rendered body type: text/plain

On Sat, 11 Mar 1995, Dale L. Puckett wrote:

> >I would like to
> >know the jumper settings on the modem (JP1, JP2, JP3, JP4) for a Yaesu FT-5100.
> >2.   On contacting Yaesu, I was told that the jack at the back of the
> >radio >may be used for
> >only 9600 baud packet operation; not 1200 baud (this was not stated in the
> >>manual). What I would
> >like to know is, has anyone ever tried operating at 9600 baud with this
> >jack? >And did it work?
>
> I have a Kantronics 9612 and have tried to us it with the FT-5100. After
> several months of frustration, I sent both the radio and tnc to Yaesu and
> told them to return it when it worked.
>
> They found the problem ... the capacitor that feeds the modulator was the
> wrong type. They fixed it and had it on the air in California for several
> hours and it didn't miss a lick with the local node there. However, when I
> got it back, I still have not been able to make a successful contact with
> anyone here in Kansas. We can usually connect put with tcp I wound up with
> a 5 percent ping return rate. About the same for ax25. We both had decent
> strength signals.
>
> I've tried for two years to get some 9600 baud activity going here but
> there is no one here with the test equipment to get it all working.

        Your wrong Dale. You now have the proper test equipment. To make
9600 baud work you MUST have 2 stations on the air! You have another
station that is close and has a good signal. So use that resource!

        First do the Bit Error Test (ber) with your modem. This where you
connect the output of your modem to the input and send a data stream thru
the modem and count the number of times you loose a pulse. When this works
good then the hard part starts.

        You seem to use nos so hook up the radio and with trace watch
what's going on on the 9600 baud channel. If it looks normal and nos
see's very few "bad packets" then your receiver is working. If lots of
error reduce the audio level to the modem, or on the modem.

        If you own a ht that covers the same frequency as 9600 baud
packet listen to it and if you own or can borrow a scope measure the peak
to peak value of the audio from your ht. Write it down. Now turn on your
system and make it transmit. Look at your peak to peak signal and if it's

real high (I think it is) turn down the audio going to the transmitter.

        If no scope try to measure the audio level with a meter in the AC
position. That works too but I like to "see" what the signal looks like.

        In time your error level will get down to a good level and you
will forget these problems. But we all went through what you are!

>
>
> 73 de Dale
> INTERNET: k0hyd@southwind.net
> AMPR: k0hyd@k0hyd.#scks.ks.usa.noam [44.122.0.4]
> WWW: www.southwind.net/~k0hyd
> FTP: ftp.southwind.net/u/k/k0hyd
> Dale L. Puckett, 23440 West Highway 54,
> Goddard, KS 67052 (316-794-2347)
>
>
>

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
 *   *
 * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
 *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
 *   *
 *   Electrical Engineer with the Army Research Laboratory   *
 *   *
 ****

71. Re: [NETSIG:1055] RE: NETSIG digest 143

From: Klarsen <k5di@acca.nmsu.edu>

Date: Sun, 12 Mar 1995 10:19:17 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950312094832.12223B-100000@acca>
Rendered body type: text/plain

The discussion of 9600 baud standards has regressed to a
discussion on how the "modem" works. The argument that a 4800 baud 1/2
cycle waveform has no harmonic content is demontratably wrong. What we do
have is a 4800 baud sinwave that changes PHASE by 180 degrees if a bit in
the data change.

        You can expand this waveform using convolution or the earlier
expansion into a series. I like the series expansion since it is
a bessell function and that has already been analysed to death! The
current working thesis is that we should filter such that the first and
second bessel elements can get through. This says that we should set the
filter edges about 7000 Hz apart centered on the waveform. This should
keep the signal, an FM modulated carrier with 3 kHz deviation within the
20 kHz at 26 DB down FCC requirement.

        The requirement for a good radio with "linear phase shift" across
it's passband is UNAVAILIAM. Unavaliam is a metal substance needed to
make bridges strong and airplanes light weight. It is just not avaiable.
But some radios are better than others. The TEKK radio does well but is
far from perfect.

        The G3RUH modem was designed to compansate for the radio's poor
phase shift and does so to a comendable degree. But in a perfect world
all this would not be a problem.

        We do need to make it easy to get a 220 MHz radio ie: cheap, that
will run a few watts and have poor filters so the receiver and
transmitter passbands are almost linear phase shift. Then a much cheaper
9600 baud modem can be stuck into this radio with no scrambler or other
compensation.

        This will be a system we could then call a standard. We can
specify data and rf bandpass filters and phase shift deviation from
linear and a lot like that. Then maybe MFJ or someone will make them.

 ****

```
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory              *
 *                                                                           *
 *****************************************************************************
```

72. unsubscribe

From: fmitchell@rdcclink.rd.qms.com
Date: Sun, 12 Mar 95 16:29:59 CST
To: netsig@tapr.org, bbssig@tapr.org, hfsig@tapr.org
Message-ID: <9502127950.AA795054599@rdcclink.rd.qms.com>
Rendered body type: text/plain

unsubscribe fmitch@rd.qms.com
     subscribe fmitch@maf.mobile.al.us

73. Second 2400 MHz NPRM

From: bruce@pixar.com (Bruce Perens)
Date: Sun, 12 Mar 95 23:06 PST
To: netsig@tapr.org, tcp-group@ucsd.edu
Message-ID: <m0ro4DD-00062HC@mongo.pixar.com>
Rendered body type: text/plain

If you haven't been keeping up with the 2400 MHz debacle, FCC has released a 150 kilobyte document containing the Report and Order and a Second Notice of Proposed Rule Making regarding coordination between Amateurs and our old and new noisy neighbors, the Part 15 and Data PCS operations on 2390-2417 MHz. You can find this document using FTP or WWW to fcc.gov . Its name is Orders/Engineering_Technology/oret5003.txt, and the WordPerfect version (which you should use if you can, because it preserves footnotes and charts that were botched in the .txt file) is called oret5003.wp .

There are lots of concerns you might have regarding living with our neighbors on 2390-2417. This latest NPRM asks them if there are any kinds of Amateur operations on the band that they would like to have restricted. It asks us about restricting their operations as well. It states that FCC sees no need for formal coordination, and asks if that's appropriate. Since there are going to be wireless digital telephones in the band, is Congress going to ignore the issue of encryption and amend the ECPA to prohibit receivers that could eavesdrop on them, the way they have done with 49 MHz and 800 MHz? That would make it difficult for Amateurs to get equipment for 2390-2417. Also, how do we identify an interfering transmitter when it's encrypted, and how do we get them to coordinate with us when we're being interfered with?

I will be filing a comment for Northern California Packet Association, in cooperation with ARRL through its Pacific Division leadership. This has to go in the mail by early Friday. If you've got anything you'd like me to mention in my comment, please e-mail it to me ASAP. Other good things you can do are to write your own comment, and to contact your ARRL director with your concerns.

        Many Thanks

        Bruce Perens AB6YM
        Board Member, Northern California Packet Association
--
Bruce Perens AB6YM 510-215-3502 Bruce@Pixar.com

Attention Ham Radio Operators: For information on "Linux for Hams", read the World Wide Web page http://www.rahul.net/perens/LinuxForHams

74. 68hc11

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 13 Mar 95 15:02:18 EST
To: netsig@tapr.org (netsig TAPR)
Message-ID: <15021573.198f@ram.net>
Rendered body type: text/plain

What tools are there for 68HC11 development that are cheap or free?

Assembler? C? Forth?

Anyone know of development/prototype boards that exist for >$100
(I know the TAPR devmeter is 68hc11, but quantity is limited)

I am interested in working on a board that interfaces between the TNC and
Modem to control TXDelay, Deviation and maybe even channel access.
(aka CSMA/CD, MACA, Slotted Aloha w/reservations, etc)

tom

75. Re: [NETSIG:1071] 68hc11

From: pipe2@oeonline.com
Date: Mon, 13 Mar 95 16:34 EST
To: netsig@tapr.org
Message-ID: <m0roHlP-0009ssC@oeonline.oeonline.com>
Rendered body type: text/plain

>What tools are there for 68HC11 development that are cheap or free?
>
>Assembler? C? Forth?

Contact Motorola's BBS (I think it's accessed by calling a CIS number and
then GO MOTOROLA, I'll check)

>Anyone know of development/prototype boards that exist for >$100
>(I know the TAPR devmeter is 68hc11, but quantity is limited)

Motorola's 68hc11 eval board is excellent! I have it and it comes with very
good docs, as well as alot of ideas on implementing various systems with the
chip.
The docs include full specs on ALL chips used on the eval board, as well as
ordering info for all the variants of the 68hc11 that were avaible as of
press time for the kit. There are many new variants around, and I don't know
if the docs have been updated. The chip is good for com apps since it has
many useful on-chip features (USART, Interrupts, RTCC, A/D). I reccomend you
also look into the PIC16c74 microcontroller for Microchip. The PIC's are
easier to program than the 68hc11 is, and the operate at much higher clock
speeds (20 MHz for 5 MIPS). They draw a mere 9mA when running at 20 MHz
which makes them ideal for remote apps (the 68hc11 is also very good with
power consumption). The PIC16c74 also has all of the on-chip features of the
68hc11 (but with less RAM, and ROM) except for the A/D. The PIC is a
modified-RISC microcontroller and it doesn't need as much ROM as many other
chips (like the 68hc11) do to accomplish the same task. The PIC comes in
many variants as well as the 68hc11, the '74 being the the second highest
PIC having 4k ROM, the 16c64 having 2k ROM. The PIC 16c57, '55, '54, and '56
have less memory, registers, and features (no interrupts!!), and they have
paged program memory, so watch out. All are excellent (and FAST!) chips.

I don't intend to turn you off to the 68hc11, it's just that I have been
using the PIC alot longer and I am better able to describe it than I am the
68hc11. They are both excellent little chips, and each is better for certain
tasks. For apps with alot of proccessing involved (routing, forwarding) look
at the PIC. For apps with higher memory needs (store-and-forward) look at
the 68hc11. The PIC's biggest shortcoming is it's lack of RAM (you are
limited to less than 256 8bit registers on the highest PIC's, 80 or less on
the '57 and below).

76. Re: [NETSIG:1071] 68hc11

From: Jim Neely <jneely@tenet.edu>
Date: Mon, 13 Mar 1995 17:54:43 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199503132354.RAA08414@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

According to Tom Moulton:
>
> What tools are there for 68HC11 development that are cheap or free?
>
> Assembler? C? Forth?
>
> Anyone know of development/prototype boards that exist for >$100
> (I know the TAPR devmeter is 68hc11, but quantity is limited)
>
> I am interested in working on a board that interfaces between the TNC and
> Modem to control TXDelay, Deviation and maybe even channel access.
> (aka CSMA/CD, MACA, Slotted Aloha w/reservations, etc)
>
> tom
>

Motorola has such an animal in the form of developers board. I worked on
a project several years ago where we used one for A/D conversion, mostly,
on a solar powered car.

Check out your local Motorola dealer.

jn
WA5LHS

77. Re: [NETSIG:1071] 68hc11

From: "David Kelly" <dkelly@iquest.com>
Date: Tue, 14 Mar 95 07:38:32 CST
To: netsig@tapr.org
Message-ID: <dkelly.1145575952D@mail.iquest.com>
Rendered body type: text/plain

>What tools are there for 68HC11 development that are cheap or free?
>
>Assembler? C? Forth?
>
>Anyone know of development/prototype boards that exist for >$100
>(I know the TAPR devmeter is 68hc11, but quantity is limited)
>
>I am interested in working on a board that interfaces between the TNC and
>Modem to control TXDelay, Deviation and maybe even channel access.
>(aka CSMA/CD, MACA, Slotted Aloha w/reservations, etc)
>
>tom

New Micros, Inc, (NMI) in Texas comes to mind (will have to dig for phone
number) with small 68HC11 boards for $75 to $100 with FORTH.

There is a patch kit for GNU-C (gcc) at ftp.cygnus.com to support the
68HC11. Can't say I've ever tried it. GCC wants to run on a Unix host. The
DJCC (?) port of gcc for dos is supposed to be stout enough to cross compile
gcc for other hosts. Gcc is available at prep.ai.mit.edu. Its big. Its
good enough for the Linux and FreeBSD developers.

Personally at work where there are more important issues than the one-
time cost of tools I use Introl C11 @ $2000. And I used NMI boards for
prototypes before I got around to making my own.

73,
--
David Kelly N4HHE,   n4hhe@amsat.org,   dkelly@iquest.com

The human mind ordinarily operates at only ten percent of its capacity
-- the rest is overhead for the operating system.

78. Re: [NETSIG:1071] 68hc11

From: "David Kelly" <dkelly@iquest.com>
Date: Tue, 14 Mar 95 07:39:42 CST
To: netsig@tapr.org
Message-ID: <dkelly.1145576022E@mail.iquest.com>
Rendered body type: text/plain

>What tools are there for 68HC11 development that are cheap or free?
>
>Assembler? C? Forth?
>
>Anyone know of development/prototype boards that exist for >$100
>(I know the TAPR devmeter is 68hc11, but quantity is limited)
>
>I am interested in working on a board that interfaces between the TNC and
>Modem to control TXDelay, Deviation and maybe even channel access.
>(aka CSMA/CD, MACA, Slotted Aloha w/reservations, etc)
>
>tom

Oh, and I forgot, I think the new AEA PK-12 is 68HC11 based. You might
just run out and buy one of those....

73,
--
David Kelly N4HHE,   n4hhe@amsat.org,   dkelly@iquest.com

The human mind ordinarily operates at only ten percent of its capacity
-- the rest is overhead for the operating system.

79. Re: [NETSIG:1074] Re: 68hc11

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 14 Mar 95 09:59:38 EST
To: netsig@tapr.org
Message-ID: <15021573.1994@ram.net>
Rendered body type: text/plain

I've gotten a few leads, Thanks guys..

I would have no problems spending $2-3K if it were work related...

the Forth board has potential.

GNU-C as well... Thanks

tom

---

80. 9600 packet radio.

From: "Nektarios Mallas" <sv2bxo@ham.hyper.gr>
Date: Wed, 15 Mar 1995 15:43:35 pst
To: netsig@tapr.org
Message-ID: <2f677ba9.ham@ham.hyper.gr>
Rendered body type: text/plain

Hello all.
I am new in 9600 operation and I have to find something to start with.
Is there any document, faq, bokk or any type of information that I can
read?
I know that this list is not apropriate for beginers, but I just
something to point me in the right direction.

Regards from Greece.
73 de sv2bxo

--
Nektarios Mallas

internet: sv2bxo@ham.hyper.gr
compuserve: 100435,2340
amprnet: sv2bxo@sv2bxo.ampr.org
traditional slow packet radio: sv2bxo@sv2jl.tsl.grc.eu

I can not watch my computer's screen. It talks to me.

---

81. Re: [NETSIG:1077] 9600 packet radio.

From: nielsen@primenet.com (Bob Nielsen)
Date: Wed, 15 Mar 1995 09:59:03 -0700
To: netsig@tapr.org
Message-ID: <199503151658.JAA13754@mailhost.primenet.com>
Rendered body type: text/plain

Nektarios Mallas writes:

>Hello all.
>I am new in 9600 operation and I have to find something to start with.
>Is there any document, faq, bokk or any type of information that I can
>read?
>I know that this list is not apropriate for beginers, but I just
>something to point me in the right direction.
>
>Regards from Greece.
>73 de sv2bxo

Mike Curtis, wd6ehr has written a manual for 9600 bps operation, containing
a lot of radio mod and other pertinent information which should help you get
started. It is available by anonymous ftp from ftp.tapr.org as
/tapr/general/9600baud/96man2x0.txt

73, Bob w6swe

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@crc.w6swe.ampr.org
  WWW: http://primenet.com/~nielsen/

---

82. PacComm Phones

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Wed, 15 Mar 95 17:47:46 UTC

To: taprnetsig
Message-ID: <1409@paccomm.com>
Rendered body type: text/plain

The phones are back in service.

About noon last Thursday there was a line cut which severed about 4000 telephone pairs. All the (813) 87x exchanges were put out of service. The outage lasted until sometime Saturday or Sunday, depending on the exact exchange.

It makes me realize how dependent we are on the copper. Voice lines, 800 numbers, fax, credit card verifier, BBS, internet tie-in, etc. It sure was quiet around here for a couple of days.

I didn't hear of any widespread 'Is PacComm out of business' rumors this time. It is very discouraging to think that is the only reason someone can think of if a phone doesn't get answered. Thanks for your patience and understanding.

_ _
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

83. Re: [NETSIG:1079] PacComm Phones

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Thu, 16 Mar 1995 13:00:09 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503162100.NAA05265@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> The phones are back in service.
>
> About noon last Thursday there was a line cut which severed about 4000
> telephone pairs. All the (813) 87x exchanges were put out of service. The
> outage lasted until sometime Saturday or Sunday, depending on the exact
> exchange.
>
> It makes me realize how dependent we are on the copper. Voice lines, 800
> numbers, fax, credit card verifier, BBS, internet tie-in, etc. It sure was
> quiet around here for a couple of days.
>
> ... It is very discouraging to think that [they're out of business] is the
> only reason someone can think of if a phone doesn't get answered.

I work in the telephone business, and am constantly amazed at how much people take the USA telephone system for granted. I also know a little about phone service in other countries - the terrible lines, inadequate service and trunks, etc.

The phone company invented a great deal of our modern technology. Terms like VU (volume unit), Bel (which we recognize in its more common delineation "decibel"), "line level" on hi-fi equipment ("line"= telephone line :-), equalizer (which Ma Bell actually uses to make the end of the line "equal" to the beginning), are all courtesy of the phone company (which is what it used to be - singular.)

We hams feel quite proud when we have a single backup unit for emergencies. Many phone company central offices are quad redundant - they actually have four switches per CO, with three being solely for backup.

Because of the phone company's obsession with reliability, we tend to rely on it, and are _usually_ well cared for. Ma Bell treats her slaves quite well. But the problem with complete reliance is that it's complete. there are no alternatives should our single point of failure go belly-up.

This is one reason I'm personally so determined to see megabit speed amateur packet commercially available. It's also the reason I don't see cost as a factor. (Look at what repeaters sell for :-)

Many running packet today use it only as teletype, and care only to type with those in simplex range. This service requires only a dumb terminal, and that's precisely what many of them run. These are not the people who will build high speed networks. It is erroneous on our part to view these collectively as the high speed amateur packet network pioneers of tomorrow. Those who will be most interested in high speed packet are mostly not on packet today.

-- mike

84. Second 2400 MHz comment

From: bruce@pixar.com (Bruce Perens)
Date: Thu, 16 Mar 95 19:06 PST
To: tcp-group@ucsd.edu, netsig@tapr.org
Message-ID: <m0rpSMm-00052JC@mongo.pixar.com>
Rendered body type: text/plain

I filed this comment for Northern California Packet Association
in response to FCC's second 2400 MHz NPRM.

Bruce Perens AB6YM

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
Allocation of Spectrum Below	)	ET Docket No. 94-32
5 GHz Transferred from	)	
Federal Government Use	)	

COMMENT OF THE NORTHERN CALIFORNIA PACKET ASSOCIATION

Submitted: March 17, 1995

Submitted by: Bruce Perens
Northern California Packet Association
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Richmond, CA 94804
510-215-3502
Internet: Bruce@Pixar.com

I. INTRODUCTION

1. Northern California Packet Association represents Radio Amateur digital packet radio operators in the Northern California area.

2. This is a comment upon FCC 95-47, the First Report and Order and Second Notice of Proposed Rule Making of ET Docket number 94-32, released on February 17, 1995.

II. BACKGROUND

1. In the Report and Order, FCC orders Radio Amateurs to share 2390-2400 MHz with Data PCS services, and continues the sharing of 2402-2417 MHz between Amateur Radio, Part 15, and the Industrial, Scientific, and Medical service. In the Second NPRM, FCC asks several questions regarding this sharing.

III. DISCUSSION

1. In the Electronic Communications and Privacy Act, Congress prohibited the sale of equipment that can receive the Cellular telephone service in the 800 MHz band and Part 15 wireless telephones in the 46-49 MHz band, and ordered FCC to enforce this prohibition. We are concerned that Part 15 and Data PCS manufacturers will persuade Congress to amend the Electronic Communications and Privacy Act to prohibit the sale and use of equipment that can eavesdrop on the operations of wireless telephones and other data communications devices operating in the 2390-2400 and 2402-2417 MHz bands, and in other bands that are shared with Radio Amateurs. Congress might then require FCC to deny type-approval to equipment that Amateurs would use to communicate in those bands. It is to the Radio Amateur's advantage that receivers for those bands continue to be available to the non-Amateur consumer, as they will then be less expensive for Amateurs to

purchase because of economies of scale. We also observe that communications listeners employ such receivers in learning about radio while they are on the path to becoming a Radio Amateur. Thus, NCPA requests that FCC protect the right of any person to purchase and operate equipment that can receive communications in the 2390-2417 MHz band and other Amateur bands, to the extent that this is possible within FCC's charter.

2. We observe several likely scenarios for conflict between Amateurs and users of of Data PCS or Part 15 equipment in the 2390-2417 MHz bands. We request that FCC take steps to protect Amateurs from these possible situations:

   A. Portable Data PCS or Part 15 equipment is brought into a residential area far from its radio LAN. The portable system, although it is out of range of its base station, continues to transmit in an attempt to reconnect to the base. This causes unnecessary interference to Radio Amateurs located in that residential area. To avoid this scenario, we request that portable Data PCS and Part 15 equipment in the 2400 MHz band be required to determine when it is unable to receive its base station, and to avoid transmitting when that is the case. Implementing this requirement in the software driver or firmware of the equipment would be trivial.

   B. Portable Data PCS or Part 15 equipment is connected to an unauthorized high-gain antenna at an employees residence in an attempt to make it possible to "telecommute" to the business LAN. Or, a business attempts to implement a link between buildings, or even between communities, using unauthorized high-gain antennas. A Radio Amateur residing in the path between the two stations is exposed to higher-than-normal effective radiated power from these stations.

   C. Part 15 or Data PCS equipment is located close to a site used for an Amateur link of 5-50 miles length. The Part 15 or PCS equipment raises the noise floor enough to make the longer-distance communication impossible.

   D. Amateur equipment causes interference to a Part 15 or Data PCS operation of a business. Rather than go through coordination, the business uses a civil suit to drive the Amateur off the air, because the Amateur can not afford to fight such a suit. Or, a business uses financial pressure to cause a landlord to evict an Amateur from a tower site.

   E. A Part 15 or Data PCS operation causes interference to a Radio Amateur. The building owner refuses to allow the Amateur access to a building in order to find the source of interference, or refuses to modify an interfering operation once it is found.

3. We are concerned that features of a Data PCS or Part 15 radio LAN that are intended to provide data communications security to the LAN users may make it more difficult for an Amateur to identify an interfering transmitter. We expect that the transmissions of Part 15 and Data PCS equipment will be encrypted, making it impossible to identify the origin of a transmission from its content. We do not see any provision requiring the manufacturer of Part 15 or Data PCS equipment to provide Amateurs with the details of the frequency-spreading codes and modulation schemes used by their equipment. Amateurs need this information in order to reliably identify an interfering transmitter. Given such information, an Amateur might be able to devise a way to mitigate interference from a particular type of equipment.

4. In the event that an Amateur experiences interference from a Part 15 or Data PCS operation, coordination should be possible given that the Amateur can identify the interfering transmitter and the person or organization responsible for its use. FCC has clearly specified that Amateurs must identify their transmissions, but has not specified any means for Part 15 and Data PCS users to identify themselves. Thus, in an interference situation, the Amateur may be clearly identified while a Data PCS or Part 15 user is protected by anonymity. In the case of business LAN, FCC should require the periodic transmission of unencrypted identification, or should require the LAN operator to file information identifying their location and the person responsible for the transmitting equipment. In the case of home equipment, FCC should explicitly specify the procedure by which an Amateur can require coordination with the operator of interfering Part 15 or Data PCS equipment.

* * *

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Bruce Perens AB6YM 510-215-3502 Bruce@Pixar.com

Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.rahul.net/perens/LinuxForHams

85. Re: [NETSIG:1080]

From: willi_r@mail.uwlax.edu (Rick Williams)
Date: Thu, 16 Mar 95 22:14:54 -0600
To: netsig@tapr.org
Message-ID: <9503170414.AA08962@mail.uwlax.edu>
Rendered body type: text/plain

>>
>This is one reason I'm personally so determined to see megabit speed
>amateur packet commercially available. It's also the reason I don't see
>cost as a factor. (Look at what repeaters sell for :-)
>

Mike,

At one time I figured that we would use really high speed links to move
traffic in ways that were not even available to the general public. Well, I
now think that is fantasy. There are too many areas to cover and too
great a span to maintain all the nodes that would be needed. We are
having difficulty in our area with trying to upgrade the backbones to 9600
and we are on the Chicago to Twin Cities Corridor.

The one path that seems workable is to use what we have and embellish
it with the amateur radio part. We would have the "local" area running under
a high speed link which people would be willing to support (like repeaters)
since the value is immediately of use (data, graphics, as well as text), and
does something you can't do any other way. Then to access all other areas
outside the LAN the internet would be the best (perhaps only practical) way
to make the network reasonably responsive. Satellites can't do it in the
forseeable future. And not every community of hams will have internet, but
most will over then next decade. And if the phone line goes down and you
lose internet, then you can hop to the nearest vhf/uhf/microwave node and
go to an operating internet gateway. If a serious disaster occurs over a wide
area and you can't find an internet point, you also won't be able to operate the
fragile ham network either. Nothing is more fragile than the packet rf links
since there is no provision for emergency staff on call, no backup power in
many cases. That leaves hf as the only other route. Maybe we can develop
hf connections that are set up in such a way that isolated users and users
in emergency need can get in with the newer higher speed digital protocols.

If there were any other way, I would sure like to know what it might be. But
I know that I would not help spend the bux needed to develop multi-
megabit links to communities hundreds of miles in all directions from my qth.
But I would spend hundreds (OK maybe a thousand) to help develop local
links at 56K and up.

Rick, KV9U

86. Re: [NETSIG:1082] Re:

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Thu, 16 Mar 1995 23:17:10 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503170717.XAA22016@kaiwan009.kaiwan.com>
Rendered body type: text/plain

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> >amateur packet commercially available. It's also the reason I don't see
> >cost as a factor. (Look at what repeaters sell for :-)
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> Mike,
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> At one time I figured that we would use really high speed links to move
> traffic in ways that were not even available to the general public. Well, I
> now think that is fantasy. There are too many areas to cover and too
> great a span to maintain all the nodes that would be needed. We are
> having difficulty in our area with trying to upgrade the backbones to 9600
> and we are on the Chicago to Twin Cities Corridor.
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> The one path that seems workable is to use what we have and embellish
> it with the amateur radio part. We would have the "local" area running under

> a high speed link which people would be willing to support (like repeaters)
> since the value is immediately of use (data, graphics, as well as text), and
> does something you can't do any other way. Then to access all other areas
> outside the LAN the internet would be the best (perhaps only practical) way
> to make the network reasonably responsive. Satellites can't do it in the
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> megabit links to communities hundreds of miles in all directions from my qth.
> But I would spend hundreds (OK maybe a thousand) to help develop local
> links at 56K and up.

I've run into exactly the things you mention. I've just drawn different
conclusions. This is because I'm looking down the road a bit. How far?
This really depends on what we can come up with, and comes back to our
determination to make amateur packet into a serious digital contender.

BTW, let me give credit at the outset. The device I speak of is not
something I dreamed up. Phil Karn put out a description of it several
years back, sort of as a "devils advocate" for digipeaters. It had such
simple elegance, and really caught my fancy.

This box is not intended for hilltops. Repeaters are 1960's technology.
today, we can't afford to waste spectrum that inefficiently. By keeping
as much of our network low level, we permit vastly more spectrum reuse.

Who's going to buy these boxes? Simple question - simpler answer - all
users of the system. This is not intended to support a bunch of
cheapskate packet moochers who bemoan the obsolescence of their Commode
64's and VIC-20's. This is designed to give a body of users the ability
to network amongst themselves, without using high level facilities.
Think of it as the ultimate digipeater network. The computer determines
the routing with the least QRM (least total power), controls power
automatically, corrects errors, makes certain no one hogs the channel,
uses sensible collision avoidance that actually works, and handles all
traffic as necessary fron adjacent stations.

When you turn yours off, mine automagically finds another route.

If you try to do this with hilltop 1200 baud, you'd kill the frequency with
overhead. But if you do it at LOW LEVEL megabit speeds, the overhead is
trivial.

If we add to this spread spectrum, we can accommodate far more users,
because the "channel" is far more robust than a simplex NBFM frequency.
SS is a more efficient use for heavily loaded RF areas than FM simplex.

I don't see this as a device to communicate over hundreds of miles in
every conceiveable direction. I see it as a box that will reliably
communicate perhaps 20 miles tops, and usually far less. It really only
needs to talk to a single station in the LAN to become part of it.

Will this box be cheap? Probably not. will it be worth it? If your idea
of packet is typing with one finger, probably not. But if you're really
serious about your data, and would like better performance than currently
available via plain old telephone service, this would be your ticket.

True, most on packet today have no concept of anything this advanced.
That's because, generally speaking, packet has little appeal for those who
really understand the implications of a high speed MAN.

As far as linking MANs, we really don't need _that_ much speed here. In
traditional WANs, linking is often done at lesser speeds, and LANs are
linked at high speed. amateur radio is rather unique in the respect of
putting higher speeds for links and lower speeds for users. This is
because none of our popular speeds are fast enough.

Does this sound more like something you'd be interested in?

-- mike

87. TAPR 9k6 modem

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Fri, 17 Mar 95 14:00:15 CST
To: netsig@tapr.org
Message-ID: <9503172200.AA12120@ingersoll.com>
Rendered body type: text/plain

Hi all,

I have a link setup with a Motorola Maxar/MFJ1270B/TAPR Modem at one end,
and a Kantronics D4-10/MFJ1270B/G3RUH Modem at the other end.

Everything is tweaked reasonably, and the received eye patterns look pretty
good at both ends. The D4-10 end is receiving pretty much error free (best I
can tell without a BER test point), however the Maxar end is not decoding as
it should. The eye at the TAPR modem at TP1 does look good.

I did some poking around and determined that the 16x clock from the tnc
looks pretty close to spec, but the RX clock at TP2 is not 9600hz like the
manual states. I measured 10256.4 Hz instead. On calibrated lab equip. at
work I also verified this.

Could this fast RX clock contribute to poor rxdata recovery?

The Maxar end is decoding many of the packets ok, but is sure not optimal.
I am also seeing some data being received with characters garbled
occasionally also.

I have not yet played with different TX waveform settings on the G3RUH yet.

Any suggestions from you 9k6 gurus out there?

Thanks,
Dave N9HKM
--
Dave Ewaldz INGERSOLL MILLING MACHINE CO.
N9HKM   Rockford, Illinois, USA

Internet   - dme@ingersoll.com
Ma-Bell   - (815)-987-6081
Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

88. Re: [NETSIG:1080] Re: PacComm Phones

From: pipe2@oeonline.com
Date: Fri, 17 Mar 95 17:19 EST
To: netsig@tapr.org
Message-ID: <m0rpkMO-000CdeC@oeonline.oeonline.com>
Rendered body type: text/plain

>Many running packet today use it only as teletype, and care only to type
>with those in simplex range. This service requires only a dumb terminal,
>and that's precisely what many of them run. These are not the people who
>will build high speed networks. It is erroneous on our part to view these
>collectively as the high speed amateur packet network pioneers of
>tomorrow. Those who will be most interested in high speed packet are
>mostly not on packet today.

Currently working on the multi-megabit packet (10 Mbps, Ethernet Router).
I'm in early stages of design, but I'm working on it. I just wish RF
spectrum analyzers were more common on the surplus market (anybody know of a
good source?).

I have no gripes about phone reliability. For the millions of miles of cable
they use, the services is EXCELLENT. I have FAR more power outages than I
have phone outages (1/4" steel guy lines on the phone trunks help alot there
:-) UPSs are common for coputer outages, yet I have never seen a device that
failsafes phone lines in the same fasion (switching to celluar or something
if the line fails). To me this suggests that the phone system is much more
reliable (which it is). The only thing I wish the phone system would do is
provide free upgrades of analog lines to T1 ;-)

yeah, right... Maybe in a dream T1 would be free..

89. Re: [NETSIG:1080] Re: PacComm Phones

From: pipe2@oeonline.com
Date: Fri, 17 Mar 95 17:22 EST
To: netsig@tapr.org
Message-ID: <m0rpkPG-000Cm9C@oeonline.oeonline.com>
Rendered body type: text/plain

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provide free upgrades of analog lines to T1 ;-)

yeah, right... Maybe in a dream T1 would be free..:-)

90. Re: [NETSIG:1083] Megabit Stuff

From: willi_r@mail.uwlax.edu (Rick Williams)
Date: Fri, 17 Mar 95 21:29:37 -0600
To: netsig@tapr.org
Message-ID: <9503180329.AA08407@mail.uwlax.edu>
Rendered body type: text/plain

Heavily edited from Mike:

>BTW, let me give credit at the outset. The device I speak of is not
>something I dreamed up. Phil Karn put out a description of it several
>years back, sort of as a "devils advocate" for digipeaters. It had such
>simple elegance, and really caught my fancy.

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>because the "channel" is far more robust than a simplex NBFM frequency.
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>needs to talk to a single station in the LAN to become part of it.
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>available via plain old telephone service, this would be your ticket.
>
>True, most on packet today have no concept of anything this advanced.
>That's because, generally speaking, packet has little appeal for those who
>really understand the implications of a high speed MAN.
>
Sounds very nice, but the difficulty seems to be that it is designed for a fairly
local area. Twenty mile range doesn't get us to the next major bbs. We have
Madison at about 150 miles and Twin Cities at 150 miles. Few if anyone
will maintain the links beyond our immediate area. So if we could have
megabit local networks to do things not possible to do (yet) with
conventional stuff and do it without wires, then we have an exciting area.

If the price is too steep for the average ham then it won't fly. It will be like
expensive fstv setups. A few might try it but it will not be mainstream. That
is where TAPR's role can be most helpful in developing and promoting
these technologies for average people like me to use. Like the DSP93
board. While it does not offer the average ham anything yet, it hopefully
will be able to do neat stuff eventually. If I can use DSP hf protocols
(CLOVER II/PacTOR II) and 56K and up for vhf/uhf packet protocols
 (including new protocols) in a system under a thousand, I think there
 will be enough takers to reach critical mass. But I can not conceive
of a way to get out beyond the twenty or so miles to effect a network
that will function across the nation. But I'm very open minded on any

alternatives.

Rick, KV9U

91. Re: [NETSIG:1087] Re: Megabit Stuff

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sat, 18 Mar 1995 00:48:26 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503180848.AAA09020@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> Sounds very nice, but the difficulty seems to be that it is designed for a fairly
> local area. Twenty mile range doesn't get us to the next major bbs. We have
> Madison at about 150 miles and Twin Cities at 150 miles. Few if anyone
> will maintain the links beyond our immediate area. So if we could have
> megabit local networks to do things not possible to do (yet) with
> conventional stuff and do it without wires, then we have an exciting area.

You're still thinking "node". Forget that, and think "USER". These things don't SERVE others. They _A_R_E_ others. And YOU. This device goes in YOUR shack, and the shack of many others in your city, just like TNCs are used now.

It is not for everyone. If you live 5 zillion miles from civilization, this device is not for you. If you live in a heavily congested packet area, this is perfect.

> If the price is too steep for the average ham then it won't fly. It will be
> like expensive fstv setups. A few might try it but it will not be
> mainstream.

The problem you're having is limiting your market. Under those constraints, you're absolutely correct - this device will NOT sell in a ham-packet market.

I don't expect most packeteers have the necessary appreciation of high speed networking for this to appeal to. But there are plenty of folks who have purposely avoided packet because it is slow and boring who this WILL appeal to. People used to LANs and internet.

As far as cost, I don't see that as a problem. Look at what new HF rigs sell for. If hams can manage these, why not a high speed digital rig that will offer a LOT more than pileups and QRM :-)

Maybe you can't afford to go out and buy one this instant, but if it offered enough communication power, I'm sure you'd save up your pocket change and find your way clear to buy one, just like all of us manage to find money for HF rigs if that's REALLY what we want. Hams are just like everyone else - we all plead poverty, but manage to find the cash for what we REALLY want.

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> will be enough takers to reach critical mass. But I can not conceive
> of a way to get out beyond the twenty or so miles to effect a network
> that will function across the nation. But I'm very open minded on any
> alternatives.

Clover? Pactor? Or any currently legal HF digital protocols? These have nothing to do with local or metropolital area networking. these would come under the cover of wide area networking. Therefore, these are not pertinent to this discussion.

You also mention VHF 56 kB; this is too slow for what I'd like to see. It also does not address hidden terminal syndrome, auto routing, auto power control, and many other things.

I'm thinking about a system that will surpass a landline modem. there is no way anything currently legal via HF can even dream about this. Now if we could us spread spectrum on HF, we _might_ have a chance. But I kind of doubt the DX community, FCC, et al, would permit this to ever happen.

I'd like nothing better than to be proven wrong on this, but I'm not

holding my breath.

 -- mike

92. Re: [NETSIG:1088] Re: Megabit Stuff

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sat, 18 Mar 1995 02:45:01 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950318021602.237B-100000@acca>
Rendered body type: text/plain

On Sat, 18 Mar 1995, Mike Curtis wrote:
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> You're still thinking "node". Forget that, and think "USER". These
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> TNCs are used now.
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> It is not for everyone. If you live 5 zillion miles from civilization,
> this device is not for you. If you live in a heavily congested packet
> area, this is perfect.

        If your instrumenting a bunch of oil wells in the outback of New Mexico then they are perfect too. A friend is in Farmington, NM doing just exactly this for El Paso Natural Gas, Inc. It works so well and is so fast that the hams up there are not using these boxes in any number at all. Problem is Mike your estimate of range is way off. They will go 5 miles with reliable service IF line-of-sight.

        At 915 MHz you don't run 50 feet of coax to the beam antenna. If you have a tower you put the whole radio on top of the tower and bring the data down to your shack in coax....

        There are relfecting rocks and absorbing rocks. Hard to tell apart. So if 2 guys spend $1000 for this system and live about 5 miles apart they need to be able to "see" each other.

        There is a real limit to how much stuff I want to send to a ham 5 miles away. But there are REAL business reasons to want to go this distance with high speed data, so the system is selling.

>
> > If the price is too steep for the average ham then it won't fly. It will be
> > like expensive fstv setups. A few might try it but it will not be
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> speed networking for this to appeal to. But there are plenty of folks who
> have purposely avoided packet because it is slow and boring who this WILL
> appeal to. People used to LANs and internet.
>

        People used to internet are used to fast data and LONG DISTANCE DATA TRANSFER! I would never even consider internet if it was just a 5 mile data line.

        My problem is the guy I want to talk to fast is 60 miles away. This means I can't do it with this device for anything like a good price. So we talk at 1200 baud and are getting ready to up this speed to 9600 baud. This is practical.

>
> As far as cost, I don't see that as a problem. Look at what new HF rigs
> sell for. If hams can manage these, why not a high speed digital rig
> that will offer a LOT more than pileups and QRM :-)
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> I'd like nothing better than to be proven wrong on this, but I'm not
> holding my breath.
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>
> -- mike
>
>

Mike talk about how you would grow a network in a city with these radio's. Will each ham need a real fast computer? How fast will the data rate be if your 20 miles apart and using other guys to "digipeat" data for you?

The guys in Farmington know this answer since they have 10,000 oil wells with these radios at them. It's working just fine.

73, karl

93. Re: [NETSIG:1089] Re: Megabit Stuff

From: tmoulton@ram.net (Tom Moulton)
Date: Sat, 18 Mar 95 06:41:28 EST
To: netsig@tapr.org
Message-ID: <15021573.19a7@ram.net>
Rendered body type: text/plain

>   People used to internet are used to fast data and LONG DISTANCE
>DATA TRANSFER! I would never even consider internet if it was just a 5
>mile data line.
>

I think that many people are pushing to use high speed LANs as an extension of the Internet.

There are three main reasons

1) There are more usefull state of the art applications on the Internet

2) Doing this can attract many new people to our hobby

3) It gives us easier access than we can get now

So it's 5-10 miles to your local Internet gateway....

We can also then seriously consider 56k between lans, when we get the user base who expects high speed over long distances so that they will want to spend the money to expand...

tom

94. Re: [NETSIG:1090] Re: Megabit Stuff

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sat, 18 Mar 1995 07:15:31 -0800 (PST)

To: netsig@tapr.org
Message-ID: <199503181515.HAA28489@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> > People used to internet are used to fast data and LONG DISTANCE
> >DATA TRANSFER! I would never even consider internet if it was just a 5
> >mile data line.
> >
>
> I think that many people are pushing to use high speed LANs as an extension
> of the Internet.
>
> There are three main reasons
>
>   1) There are more usefull state of the art applications on the Internet
>
>   2) Doing this can attract many new people to our hobby
>
>   3) It gives us easier access than we can get now
>
> So it's 5-10 miles to your local Internet gateway....
>
> We can also then seriously consider 56k between lans, when we get the user
> base who expects high speed over long distances so that they will want to
> spend the money to expand...

Once we have megabit speed LANs, arranging medium speed linking of them
will meet with a lot less resistance/problems. In my experience, getting
USERS up to speed is the big hurdle. Once the userbase has the speed,
they're "sold", and will support a serious system.

A few years back, 9600 baud was viewed as a "backbone only" medium. A
group of us in Los Angeles wanted it for end users. We of course met
with much resistance, but finally got frequencies coordinated for it.
Once we had a sizeable userbase, interest in higher speed networking
rose. When users got to see firsthand what was possible at 9600 baud
with neighbor stations, they wanted it for not-so-close stations. There
is a lot more support for a network now than before.

Currently, most users won't financially support systems because they don't
really comprehend the need. The burden of financing and maintaining a
network falls on a scant few shoulders of those who appreciate what a
network means to packet. As long as this is the case, packet growth is
going to be rather limited.

While LANs can be linked via internet, there's no reason they can't be
linked by other means as well, such as point to point medium or high
speed full duplex links, satellite, leased line, or?? In fact, I believe
there are compelling reasons why alternatives to internet _should_ be
developed, the biggest being diversity.

 -- mike

95. Re: [NETSIG:1048] What's needed to get o

From: WCHAST@delphi.com
Date: Sat, 18 Mar 1995 11:30:03 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HOA300ZQ5698895M@delphi.com>
Rendered body type: text/plain

Tom, I would just run TNOS and let that be your RF access to your LAN.

I am planning on doing that here as soon as I get another couple of machines
up and running.

Chuck Hast
No Dumb Operating System here, only OS/2. Soon to add LINUX.
Delphi: wchast@delphi.com
AX25 BBS: kp4djt@kp4djt.tpa.fl.usa.noam
ampr.org: kp4djt.ampr.org
AX.121:   3100813077
---

96. Re: [NETSIG:1091] Re: Megabit Stuff

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 18 Mar 1995 12:41:34 -0600 (CST)
To: netsig@tapr.org

Message-ID: <199503181841.MAA21676@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Mike - wish you could have been at the TAPR meeting. We had a very good
discussion on Saturday regarding this subject.

Greg, WD5IVD

According to Mike Curtis:
>
> >
> > >   People used to internet are used to fast data and LONG DISTANCE
> > >DATA TRANSFER! I would never even consider internet if it was just a 5
> > >mile data line.
> > >
> >
> > I think that many people are pushing to use high speed LANs as an extension
> > of the Internet.
> >
> > There are three main reasons
> >
> >   1) There are more usefull state of the art applications on the Internet
> >
> >   2) Doing this can attract many new people to our hobby
> >
> >   3) It gives us easier access than we can get now
> >
> > So it's 5-10 miles to your local Internet gateway....
> >
> > We can also then seriously consider 56k between lans, when we get the user
> > base who expects high speed over long distances so that they will want to
> > spend the money to expand...
>
> Once we have megabit speed LANs, arranging medium speed linking of them
> will meet with a lot less resistance/problems. In my experience, getting
> USERS up to speed is the big hurdle. Once the userbase has the speed,
> they're "sold", and will support a serious system.
>
> A few years back, 9600 baud was viewed as a "backbone only" medium. A
> group of us in Los Angeles wanted it for end users. We of course met
> with much resistance, but finally got frequencies coordinated for it.
> Once we had a sizeable userbase, interest in higher speed networking
> rose. When users got to see firsthand what was possible at 9600 baud
> with neighbor stations, they wanted it for not-so-close stations. There
> is a lot more support for a network now than before.
>
> Currently, most users won't financially support systems because they don't
> really comprehend the need. The burden of financing and maintaining a
> network falls on a scant few shoulders of those who appreciate what a
> network means to packet. As long as this is the case, packet growth is
> going to be rather limited.
>
> While LANs can be linked via internet, there's no reason they can't be
> linked by other means as well, such as point to point medium or high
> speed full duplex links, satellite, leased line, or?? In fact, I believe
> there are compelling reasons why alternatives to internet _should_ be
> developed, the biggest being diversity.
>
> -- mike
>
>

97. Re: [NETSIG:1087] Re: Megabit Stuff

From: pipe2@oeonline.com
Date: Sat, 18 Mar 95 14:47 EST
To: netsig@tapr.org
Message-ID: <m0rq4TO-000Cl2C@oeonline.oeonline.com>
Rendered body type: text/plain

> But I can not conceive
>of a way to get out beyond the twenty or so miles to effect a network
>that will function across the nation. But I'm very open minded on any
>alternatives.

Perhaps a point-to-point microwave link could be used between cities. With
good dishes mounted on towers or high buildings a link could be constructed
that would operate at very high speeds and would be reliable over long
distances, without intermediate sites to repeat the signal.

98. Re: [NETSIG:1093] Re: Megabit Stuff

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sun, 19 Mar 1995 02:31:16 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503191031.CAA24880@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> Mike - wish you could have been at the TAPR meeting. We had a very good
> discussion on Saturday regarding this subject.

Where was it? Tucson? Or??

 -- mike

99. Re: [NETSIG:1094] Re: Megabit Stuff

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Sun, 19 Mar 1995 02:40:16 -0800 (PST)
To: netsig@tapr.org
Message-ID: <199503191040.CAA00611@kaiwan009.kaiwan.com>
Rendered body type: text/plain

>
> > But I can not conceive
> >of a way to get out beyond the twenty or so miles to effect a network
> >that will function across the nation. But I'm very open minded on any
> >alternatives.
>
> Perhaps a point-to-point microwave link could be used between cities. With
> good dishes mounted on towers or high buildings a link could be constructed
> that would operate at very high speeds and would be reliable over long
> distances, without intermediate sites to repeat the signal.

To get support for this, we FIRST need to get users up to speed locally.
the biggest need is in large cities like LA and NY, where frequencies are
scarce and digital density is thick. Once you have these going LOCALLY,
it is trivial to link via internet.

Once we have this type of system, with high speed locally and medium
speed nationally/worldwide, things will work fine. We don't need high
speed to link LANs. We will have local fileservers and mail exchangers,
etc., so most of the speed will be needed locally. We need only a single
copy of JNOS 1.10i source code, for example. Once it is in your LAN,
there is absolutely no need to get it elsewhere. your local ARCHIE
server will gladly locate it for you.

But this requires a FAST local area network.

It does NOT require a fast wide area network. In fact, it wouldn't
surprise me in the least if a single 9600 baud full duplex link could
easily service the entire Southern California area.

Of course, if you want to run fast scan TV via binary links, you're going
to need a little more than 9600 baud :-)

 -- mike

100. Re: [NETSIG:1092] Re: What's needed to get o

From: tmoulton@ram.net (Tom Moulton)
Date: Sun, 19 Mar 95 07:17:03 EST
To: netsig@tapr.org
Message-ID: <15021573.19a8@ram.net>
Rendered body type: text/plain

>Tom, I would just run TNOS and let that be your RF access to your LAN.
>
>I am planning on doing that here as soon as I get another couple of machines
>
>up and running.
>
>---
>Chuck Hast

But TNOS does not support the Web,

I was talking about having IP access so that one of the many applications
that already run over IP would run via radio.
tom

101. (list maintenance) can't seem to unsubscribe

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Sun, 19 Mar 95 10:26:12 -0700
To: netsig@tapr.org
Message-ID: <9503191726.AA00570@n.kb7eec.ampr.org>
Rendered body type: text/plain

I tried a few things, involving listproc and even sending mail to postmaster. But, netsig_l@uugate.ampr.org still seems to be on the list. Can anyone tell me how to remove it from the list? It turned out that uugate already received netsig mail, under another name.

Thanks for any help,
Gary

102. TAPR meeting -- any company news?

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Sun, 19 Mar 95 10:31:49 -0700
To: netsig@tapr.org
Message-ID: <9503191731.AA00577@n.kb7eec.ampr.org>
Rendered body type: text/plain

What was discussed at the TAPR meeting? Casual, miscellaneous comments would be appreciated!

How about any news involving companies who manufacture radio computer networking equipment?

73,
Gary

103. Re: [NETSIG:1095] Re: Megabit Stuff

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 19 Mar 1995 15:27:40 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199503192127.PAA12847@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

As was published for the past several month the meeting was held in St Louis the first of March. :-)

As people get time - there should be something posted to tapr-bb shortly and I know there will be a blow-by-blow in the next PSR.

Cheers - Greg

According to Mike Curtis:
>
> > Mike - wish you could have been at the TAPR meeting. We had a very good
> > discussion on Saturday regarding this subject.
>
> Where was it? Tucson? Or??
>
>
> -- mike
>
>

104. Re: [NETSIG:1080] Re: PacComm Phones

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Tue, 21 Mar 95 07:03:42 UTC
To: netsig@tapr.org
Message-ID: <1609@paccomm.com>
Rendered body type: text/plain

Mike, roger your comments on dependence on phones.

Just wanted to comment on your statement that "Those who will be most interested in high speed packet are mostly not on packet today."

I tend to agree, but don't want to start a row. There is such a flame going on on the BBSSIG about what is ham radio and what isn't and I don't want to import that here. But things are changing drastically in the world, not just in technology. To think that Ham Radio can retain its past characteristics is not realistic. The hobby is not yet 100 years old, about the same age as automobiles and aircraft. Look at how that technology has changed and the associated social changes. There is no way to stand still.

The current furor reminds me of ten-twelve years ago when I spoke at
numerous hamfests to introduce people to packet radio. I often got the
response that computers were not ham radio, so a device to connect one
computer to another via radio wasn't ham radio either. You don't hear
that any more from anyone but the smallest minority. No doubt the
concerns about wormholes will go the same way.

_ _
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

105. Help with PacComm Sprint-2

From: "Michael R. Zeug" <mzeug@ameris.center.il.ameritech.com>
Date: Tue, 21 Mar 1995 07:57:17 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199503211357.HAA13974@ameris.center.il.ameritech.com>
Rendered body type: text/plain

Hello

I had originally posted this message to the packetcluster email
reflector. It was pointed out to me that there are a number of
very knowledgable people on this reflector who might be able to
help. Any help/suggestions/ideas would be greatly appreciated.

I am having a devil of a time figuring out a problem that I'm
having with my Sprint-2 tncs. I want to use the sprint-2s to
interconnect two packetcluster nodes. Both packetcluster nodes
are running BPQ. The Sprint-2s are running in KISS mode. After
running for awhile, one end of the link gets into a state where it
continuously sends receive-ready packets to the other end. During
this time no information can be sent over the link, but
information from the far end can be received (or at least the BPQ
nodes broadcast can be received).

I have taken the equipment out of service and spent this weekend
running tests on it. With one end configured as a user (running
the normal PacComm firmware and a "dumb terminal" emulation
program, I had no problem connecting and staying connected to the
packetcluster node. I then reconfigured the "user" end as
follows: TERM4 -> BPQ -> Sprint-2 w/ KISS -> radio. With this
configuration I was able to connect to the packetcluster and could
stay connected for about an hour. Eventually the user end tnc
would begin to send repeated receiver-ready frames to the
packetcluster. During this time nothing from the user keyboard
was sent to the packetcluster. Apparently the packetcluster end
of the circuit was not responding to the receiver-ready frames and
after exceeding the retry count, BPQ at the user end would
disconnect. At this point the packetcluster still thought that
the user was connected. The packetcluster continued to think the
user was connected until the next packet to the user went
unacknowledged.

After becoming disconnected, I was unable to reconnect from the
user end without power cycling the tnc. Power cycling the tnc on
the packetcluster had no affect.

Has anyone else experienced this problem? Any solutions???

Thanks

73 de mike k9ec
mzeug@ameris.ameritech.com

106. [NETSIG:1099] TAPR meeting -- any company news? -Reply

From: Orville Beach <Orv@micom.com>
Date: Tue, 21 Mar 1995 08:42:54 -0800
To: netsig@tapr.org
Message-ID: <sf6e91c7.011@micom.com>
Rendered body type: text/plain

>>> Gary Crum <crum@n.kb7eec.ampr.org> 03/19/95 10 13am >>>
What was discussed at the TAPR meeting? Casual, miscellaneous
comments would   be appreciated!

How about any news involving companies who manufacture radio

computer   networking equipment?

73,
Gary

==========
Greg said that it'd be in the PSR, but I'll make a few comments from my
point of view.

I had a blast! I had forgotten how much fun it was to yack about packet
radio. I renewed old friendships and made a bunch of new friends.   It
restored my enthusiasm about digital ham radio. If you've never been to
one of the TAPR meetings or the Digital conferences, make an effort to
go! It's worth it.

The highlight for me, personally, was Brian's release of TNOS under
Linux. I've been waiting YEARS for something like that - a real serious
ham radio digital communications package running on an
industrial-strengh OS. Now I can proceed with upgrading 3 switch sites!

Gwyn brought some of his PacComm goodies up, and it's always nice
to do touchy-feelie with the new toys. There was some other show and
tell stuff. The APRS demo was real nifty.

The presentations, like any other convention, ran the gamut from
yawners to really interesting [but then, my 'yawner' would be someone
elses 'real interesting' :-)]. I won't go into detail on them, as Greg said
they'll be discussed thoroughly in an upcoming PSR.

I got to tour K0PFX's switching center in his basement ham shack.
Never seen so many Mitreks in one place in my life, espcially the 9600
baud flavor. VERY nice, Mel!

And, Greg, IVD, TAPR Pres., bought me dinner... (thanks again, Greg!)

-- Orv - wb6wey

==========
Orville Beach
Network Manager
MICOM Communications Corp.
Simi Valley, California
Internet: orv@micom.com
Amprnet: wb6wey@wb6wey.ampr.org
==========

107. Who's doing what, where?

From: Scott Ehrlich <scotte@ccs.neu.edu>
Date: Tue, 21 Mar 1995 13:37:53 -0500
To: netsig@tapr.org
Message-ID: <199503211837.NAA04901@ararat.ccs.neu.edu>
Rendered body type: text/plain

Hello to all.

Having just been appointed Internetworking Assistant Section Manager for
Eastern Mass (assisting with digital communication as it relates to ham
radio), I've been invited to a section meeting in the Boston,
Massachusetts, USA area. I'd like to know what kinds of networks
currently exist around the country and the world, and present the results
to the other guests.

What networks, technologies, speeds, etc. are being played with?

Anything unique?   Anything special with AMSAT/SAREX?

Any help would be appreciated.

73,

Scott Ehrlich, Internetworking ASM, Eastern Mass. E-mail: wy1z@neu.edu
Boston ARC ftp archives: ftp oak.oakland.edu /pub/hamradio
Boston ARC Web page: http://www.acs.oakland.edu/barc.html
ARRL Web page: http://www.acs.oakland.edu/barc/arrl.html

108. Re: [NETSIG:1101] Re: PacComm Phones

From: Mike Curtis <wd6ehr@kaiwan.com>
Date: Tue, 21 Mar 1995 13:03:51 -0800 (PST)

To: netsig@tapr.org
Message-ID: <199503212103.NAA12649@kaiwan009.kaiwan.com>
Rendered body type: text/plain

> Mike, roger your comments on dependence on phones.
>
> Just wanted to comment on your statement that "Those who will be most
> interested in high speed packet are mostly not on packet today."
>
> I tend to agree, but don't want to start a row. There is such a flame going
> on on the BBSSIG about what is ham radio and what isn't and I don't want
> to import that here. But things are changing drastically in the world, not
> just in technology. To think that Ham Radio can retain its past character-
> istics is not realistic. The hobby is not yet 100 years old, about the
> same age as automobiles and aircraft. Look at how that technology has
> changed and the associated social changes. There is no way to stand still.

I completely understand, and agree. There is, always has been, and always will be an arch-conservative element that will try to the death to prevent anything from ever changing. Why? I really don't know. Is it laziness (I don't want to buy/build/learn yet more <fill-in-new-stuff>)? Is it fear of the unknown/change/future/<intangible of your choice>? Is it distrust of science? (Not at all undeserved, either! Look at Thalidomide, the ozone layer, pesticides, ad nauseum - or should we make that "ad mausoleum" considering certain results? And no smiley on this one.) Is it the fact that many hams are older, and many older people "like things the way they are"? Is it that change has a "domino effect", and causes change elsewhere (higher speeds will likely impact existing packet, as well as voice and other modes)?

I tend to believe it's a combination of the above. I know people falling into each of these categories who have resisted change, or at least complained about it. Because I care about people and what they feel even if I don't agree, I often can get people to open up on topics we don't agree on, and have constructive dialog without turning it into a personal attack and/or argument. As much as I want things to move ahead, I also understand why certain ones stand opposed to change. I just don't (usually) agree.

> The current furor reminds me of ten-twelve years ago when I spoke at
> numerous hamfests to introduce people to packet radio. I often got the
> response that computers were not ham radio, so a device to connect one
> computer to another via radio wasn't ham radio either. You don't hear
> that any more from anyone but the smallest minority. No doubt the
> concerns about wormholes will go the same way.

There will always be those who treat ham radio as a mindless religion, filled with mindless and mostly meaningless dogmas such as "it ain't ham radio if it ain't got a key or microphone". Edisons electric light ran into exactly the same objections, and I'm sure every other major step forward has, too. I prefer to treat this with the utter comtempt and disregard it deserves.

Or to put it another way, "Your karma just ran over my dogma". This seemingly meaningless half-witticism actually says a lot. When we change, it DOES infringe on those who don't want/like change.

While a lot of concern about wormholes is the stick-in-the-mud dogma "it's not ham radio", some concern is IMHO legitimate, i.e. "it depends on the phone company and we should be prepared for phone system failures." For example, it is possible that "hackers" of some sort could sabotage the phone company severely enough to shut it down for practical purposes. This is all the more likely when they're movong toward an autologous software platform for all their switches. This would make upgrades on various and sundry hardware trivial - but would also expose them to universal tampering and malfeasance.

And of course don't forget possible buglets in software :-)

Because of this, I personally feel it's wise to have an alternative. HF autoforwarding is a good start, but I really feel we should get more (and faster) options going. Packet satellites are great, but even 9600 is low speed in the digital world. What would be nice would be a megabit speed geostationary satellite with multiple receivers and a single transmitter. Of course, with our microwave bands being shared, this may be problematic, but I'm certain the FCC could easily be persuaded as to the importance of this project and formulate rulemaking and enforcement in our favor on this one.

And of course, we will likely end up with a lot of point to point
terrestrial links, too.

The least stressful way to do these things would be to get everyone who
is interested involved in a discussion, build the hardware, and set up a
working model in a busy area. Once this has been done, people will see
exactly what it is capable of doing and will want one.

Perhaps the best way to promote something like this in other areas is to
enlist the help of a few beta testers, who would set up a system in
various high population density areas. Once this has been done, others
will want one. Once this technology hits a critical mass, there will be
no stopping it.

I've seen this with 9600 baud packet at the end user level here in Los
Angeles, and I'm sure you have seen it also in many fields.

 -- mike

109. 9600 Modem

From: kd6oat@kd6oat.ampr.org
Date: Tue, 21 Mar 95 18:16:21 pst
To: netsig@tapr.org
Message-ID: <5210@kd6oat.ampr.org>
Rendered body type: text/plain

Hi everyone. I am not subscribed here so I would appreciate a direct response
from whoever wishes to help me out. I just assembled a TAPR 9600 modem and
am waiting for a PI2 card that is on order. I have a TEKK KS-960 sitting on the
shelf and am currently running 1200 baud on 2m using a PK-232MBX. I think I have
some choices with respect to where and how the 9600 modem is located and would
appreciate any information from users of a similar system. Thanks to Mike wd6ehrfor the great 9600
booklet that came with the m
odem and thanks to Clint ka7oei for the mods. And thanks to whoever answers this request...
Ken   kd6oat@kd6oat.ampr.org 44.40.1.40
      kd6oat@uugate.aim.utah.edu

110. Re: [NETSIG:1102] Help with PacComm Sprint-2

From: rdonnell@mail.eskimo.com (Robert Donnell)
Date: Wed, 22 Mar 1995 01:30:02 -0800
To: netsig@tapr.org
Message-ID: <199503220930.AA13947@mail.eskimo.com>
Rendered body type: text/plain

>Hello
>
>I had originally posted this message to the packetcluster email
>reflector. It was pointed out to me that there are a number of
>very knowledgable people on this reflector who might be able to
>help. Any help/suggestions/ideas would be greatly appreciated.
>
>I am having a devil of a time figuring out a problem that I'm
>having with my Sprint-2 tncs. I want to use the sprint-2s to
>interconnect two packetcluster nodes. Both packetcluster nodes
>are running BPQ. The Sprint-2s are running in KISS mode. After
>running for awhile, one end of the link gets into a state where it
>continuously sends receive-ready packets to the other end. During
>this time no information can be sent over the link, but
>information from the far end can be received (or at least the BPQ
>nodes broadcast can be received).
>
>I have taken the equipment out of service and spent this weekend
>running tests on it. With one end configured as a user (running
>the normal PacComm firmware and a "dumb terminal" emulation
>program, I had no problem connecting and staying connected to the
>packetcluster node. I then reconfigured the "user" end as
>follows: TERM4 -> BPQ -> Sprint-2 w/ KISS -> radio. With this
>configuration I was able to connect to the packetcluster and could
>stay connected for about an hour. Eventually the user end tnc
>would begin to send repeated receiver-ready frames to the
>packetcluster. During this time nothing from the user keyboard
>was sent to the packetcluster. Apparently the packetcluster end
>of the circuit was not responding to the receiver-ready frames and
>after exceeding the retry count, BPQ at the user end would
>disconnect. At this point the packetcluster still thought that
>the user was connected. The packetcluster continued to think the
>user was connected until the next packet to the user went
>unacknowledged.

>
>After becoming disconnected, I was unable to reconnect from the
>user end without power cycling the tnc. Power cycling the tnc on
>the packetcluster had no affect.
>
>Has anyone else experienced this problem? Any solutions???
>
>Thanks
>
>73 de mike k9ec
>mzeug@ameris.ameritech.com
>
>
>

What you describe sounds somewhat similar to one of the problems I saw with
running BPQ on a busy channel, about 5 years ago. If you're using standard
KISS, BPQ has no way of knowing that packets sent to the TNC have actually
been sent on the air. If you have BPQ's FRACK set for too low a value (less
than say 20 seconds) and the channel gets busy, BPQ will send a second (and
maybe a third) poll packet to the same station, which the TNC queues and
transmits when the channel finally clears. This causes the station at the
other end of the link to respond to each of the polls.   BPQ receives each
poll and sends data packets (potentially, MAXFRAME packets) for >each<
response packet received. This can escalate into the kind of 'firestorm'
you've described.

The only solutions I know of for this are either to:
1) reconfigure the TNC and BPQ to use the KISS extensions that BPQ has
greated to help with thesed kinds of problems, most noteably where the TNC
informs BPQ when it actually transmits the packets.
2) Set your FRACK to be greater than the longest time you ever hear the
channel remaining busy at once.

The only thing I've seen that's worse is when I observed the firmware bug
where if someone generated a packet with one or more digipeater fields set
to all zeros, that all the TNCs with the 'MYALIAS' command not set would
digipeat this frame - endlessly.

Hope that helps! 73, Bob

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
----

111. Re: [NETSIG:1104] Who's doing what, where?

From: Steve Schwarm <schwarm@spectre.mitre.org>
Date: Wed, 22 Mar 1995 07:38:21 -0500
To: netsig@tapr.org
Message-ID: <199503221238.HAA25322@spectre.mitre.org>
Rendered body type: text/plain

Nice to hear about your appointment. Sorry that we have not been
able to get together. I've been traveling a lot. When do you go back
to school? I'll be around the 1st week of April.

Stephen(Steve) Schwarm
Principal
The MITRE Corp.
202 Burlington Rd MS B155
Bedford, MA 01730
(617)271-4600
FAX: (617)271-4686
Schwarm@mitre.org
Packet: W3EVE @ K1UGM.#EMA.MA.USA.NA

112. PACK*BASH at Dayton Hamvention

From: jra@ag9v.ampr.org
Date: Wed, 22 Mar 1995 09:16:26 -0500 (EST)
To: netsig@tapr.org, nos-bbs@hydra.carleton.ca, tcp-group@ucsd.edu
Message-ID: <199503221416.JAA06087@ag9v.ampr.org>
Rendered body type: text/plain

Attending the 1995 Dayton Hamvention? Then don't miss out on PACK*BASH!

What?
        A new event for the digitally-inclined ham, featuring:
        * Buffet dinner (with cash bar)

```
        *  Nationally-known speaker holding forth on a current topic
        *  Prize raffle
        *  TAPR special interest group meetings
        *  "Bird of a Feather" gatherings

When?
        Friday evening, April 28, 1995
        Dinner starts at 7:00 pm
        Speaker at 7:45
        Meetings to begin after the speaker


Where?
        TJ's Restaurant
        2462 Dryden Road, Dayton
        (Dryden Road exit, I75 -- across from the Holiday Inn)

How?
        Dinner requires advance registration and payment BY APRIL 24th, 1995.
        Seating for dinner only is limited, so register early!  The cost is
        $16.00 per person, tax and tip included.

        All amateurs are welcomed to attend, enjoy the speaker, and
        particpate in the meetings, although only those purcashing a dinner
        can eat.

        To register, contact:
        PACK*BASH
        c/o TAPR
        8987-309 E. Tanque Verde Road #337
        Tucson, AZ   85749-9399

        Phone: (817) 383-0000
        Fax: (817) 566-2544
        Internet: TAPR@TAPR.ORG

        Visa/Mastercard Accepted

Who?
        PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet Radio,
        the national leader in digital communication -- and the Miami
        Valley FM Association, Dayton's packet radio club.

For further information, contact TAPR, or email packbash@ag9v.ampr.org or
BASH@N8ACV.#DAY.OH.USA.NOAM

--
John Ackermann   AG9V
Internet:  jra@ag9v.ampr.org
Packet:    AG9V@N8ACV.#DAY.OH.USA
```

113. Re: [NETSIG:1108] Re: Who's doing what, where?

```
From: Scott Ehrlich <scotte@ccs.neu.edu>
Date: Wed, 22 Mar 1995 13:13:38 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199503221813.NAA07604@batu.ccs.neu.edu>
Rendered body type: text/plain
```

```
>
> Nice to hear about your appointment.  Sorry that  we have not been
> able to get together.  I've been traveling a lot.  When do you go back
> to school?  I'll be around the 1st week of April.

Thanks.

Schedules don't always turn out as everyone expects.

I'll be going back to classes starting April 5, with March 24 being my
last day of work.

>
> Stephen(Steve) Schwarm
> Principal
> The MITRE Corp.
> 202 Burlington Rd MS B155
> Bedford, MA 01730
> (617)271-4600
> FAX: (617)271-4686
> Schwarm@mitre.org
```

> Packet: W3EVE @ K1UGM.#EMA.MA.USA.NA
>
>

Scott Ehrlich, Internetworking ASM, Eastern Mass. E-mail: wy1z@neu.edu
Boston ARC ftp archives: ftp oak.oakland.edu /pub/hamradio
Boston ARC Web page: http://www.acs.oakland.edu/barc.html
ARRL Web page: http://www.acs.oakland.edu/barc/arrl.html

114. ETHRAX25 and MFJ-1278

From: ac408@dayton.wright.edu (Andrew Lynch)
Date: Wed, 22 Mar 95 15:29:32 -0500 <Wed Mar 22 15:29:32 1995>
To: netsig@tapr.org
Message-ID: <9503222029.AA20069@wpdis01.wpafb.af.mil>
Rendered body type: text/plain

Has anyone gotten ETHRAX25 and an MFJ-1278 TNC to work together? I cannot
get ETHRAX25 to receive packets, though it seems to send them fine. I think
I am not installing the driver properly. Would someone send me their
configuration or any pointers to get these to cooperate?

I can send you more detailed explanation on request.

Thank you!!

73 de N8VEM

Andrew Lynch

115. Re: [NETSIG:1102] Help with PacComm Sprint-2

From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 23 Mar 1995 05:07:44 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950323045817.13015A-100000@acca>
Rendered body type: text/plain

On Tue, 21 Mar 1995, Michael R. Zeug wrote:

> Hello
>
> I had originally posted this message to the packetcluster email
> reflector. It was pointed out to me that there are a number of
> very knowledgable people on this reflector who might be able to
> help. Any help/suggestions/ideas would be greatly appreciated.
>
> I am having a devil of a time figuring out a problem that I'm
> having with my Sprint-2 tncs. I want to use the sprint-2s to
> interconnect two packetcluster nodes. Both packetcluster nodes
> are running BPQ. The Sprint-2s are running in KISS mode. After
> running for awhile, one end of the link gets into a state where it
> continuously sends receive-ready packets to the other end. During
> this time no information can be sent over the link, but
> information from the far end can be received (or at least the BPQ
> nodes broadcast can be received).

        Mike, this sure sounds like a problem I had with BPQ a few years
ago. For some reason I "forgot" that almost all time parameters on the
port setup are in milliseconds. So I set FRACK=8 and got the problem your
having. It is odd that it even worked at all! But guess it doesn't often
happen that frack is called. But when it is, kate bar the door!

        So please check and if your using maxframe=7, and maybe you
should, then make frack about 8 seconds with frack=8000

73, karl k5di

116. 9k6 TheNet Params

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Thu, 23 Mar 95 17:26:28 CST
To: netsig@tapr.org
Cc: ham-digital@ucsd.edu
Message-ID: <9503240126.AA03856@ingersoll.com>
Rendered body type: text/plain

In putting up a new 9600 baud link here locally, we are now at the stages of
fine tuning parameters. Both ends of the link are TheNet X1J nodes, and are
the only stations on the frequency. Has anyone figured out a set of optimal

X1J parameters for a link like this? Anyone done any serious tweaking of X1J
nodes at 9600 baud?
I would welcome any recommendations anyone might have.
73 de Dave N9HKM
--
Dave Ewaldz INGERSOLL MILLING MACHINE CO.
N9HKM   Rockford, Illinois, USA

Internet   - dme@ingersoll.com
Ma-Bell   - (815)-987-6081
Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

117. Re: [NETSIG:1026] Re: March Topic of the Month: Media Access Control

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Sun, 26 Mar 1995 23:16:29 -0800
To: netsig@tapr.org
Message-ID: <9503270716.AA11606@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

Sorry about letting the Topic of the Month of March lapse. We were a bit
wet here in Monterey County. So that now the rivers are lowering and we are
between storms...

The last we heard, Tom (tmoulton@ram.net) said...

>The directions helped...
>
>Phil's article is interesting... no pictures... always ARRL books for CNC...
>
>We need to pick topologies, three come to mind
>
>1) Random (Like 145.01)
>2) Hub (Bunch of users off one switch)
>3) Backbone
>
>#1 needs something based upon MACA
>
>#2 Might best be solved with the switch being the Master of the LAN.
>   (Could even have users request channel time from the master when
>   talking directly to each other)
>
>#3 Use CSMA/CD when all can hear each other or just point to point or
>   even better use Full Duplex
>
>What other CHannel Access protocols are out there?
>(and where can we get the paper describing it?)
>
>Fantasitc topic!
>

Pick your topology, make it fit the situation. I firmly believe that no one
topology fits all situations. We are establishing here a hub topology
because it has the benefits of simplicity and improves the connectivity of
the users.

What other channel access protocols are there?

 - ALOHA
 - Slotted ALOHA
 - Reservation mode
 - Busy Tone
 - CDMA
 - TDMA
 - FDMA
 - CSMA/CA (What we are using now)
 - CSMA/CD

Papers? You wouldn't believe the vast number of papers written on packet
radio. Below I am including a biblography of papers from professional
journals that I have collected over the past couple of years. They are in
chronological order. I have been collecting papers on Medium Access
protocols and Networking (and routing) issues. Take a look through the
titles and you can get a feel of the topics that are covered. This list is
by know means exhaustive. If you know of any other papers that I could add
to this list, let me know.

Don't forget the ARRL Computer Networking Conferences Proceedings, these
contain a wealth of information that are very useful and more in line with
amateur packet radio.

If you perform an electronic search for packet radio topics you will find that the words "packet radio" will return papers that date back to the 70's and early 80's. I was surprised that there were no recent papers on packet radio until one day I tried "wireless" and a bunch of papers popped up. So the lesson learned here was that it's still data communications over radio, it just has a different (though not newer) name.

If you like the idea of Phil's MACA, don't forget to get the paper "MACAW: A Media Access Protocol for Wireless LAN's", ACM SIGCOMM Aug. 94 in London England UK. It has some good ideas in it and shows that the implementation at Xerox really does work. Now, we need to implement it here in our ham bands and pioneer it.

73, Steve, N7HPR

-------------------8< snip 8<---------------------------

Packet Radio Topics in Professional Journals
S. R. Bible, N7HPR - March 26, 1995

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Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943

118. Re: [NETSIG:1114] Re: March Topic of the Month: Media Access Control

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 27 Mar 1995 02:51:30 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950327022906.7562A-100000@acca>
Rendered body type: text/plain

On Mon, 27 Mar 1995, Steven R. Bible wrote:

> Sorry about letting the Topic of the Month of March lapse. We were a bit
> wet here in Monterey County. So that now the rivers are lowering and we are
> between storms...
>
> The last we heard, Tom (tmoulton@ram.net) said...
>
> >The directions helped...
> >
> >Phil's article is interesting... no pictures... always ARRL books for=
> CNC...
> >
> >We need to pick topologies, three come to mind
> >
> >1) Random (Like 145.01)
> >2) Hub (Bunch of users off one switch)
> >3) Backbone
> >
> >#1 needs something based upon MACA

Random is a good definition of the present netrom simplex network
that is EVERYWHERE in the WORLD!

I have read Phil's paper on MACA and put it where anyone reading
this can get it (ftp.ucsd.edu in /incoming). I am going to implement MACA
into the x1j node software since I have the source code for Dave's node.

MACA will be implemented as an additional SUPERVISORY packet. We
have 4 now in AX.25 and a whole byte to work with, so no problem is seen
defining a "Request to send" and "Clear to send" Bytes. It isn't clear to
me now how to include the data information in a S packet. That may be a
sticky wicket.

Also need a DOS based compiler that does CP/M. I have one but
alas it is a pascal compiler and I need one for C. I have many shareware
tiny-C compilers but they are too new! They were all ported over to DOS
from CP/M...hi

-karl k5di

119. Re: [NETSIG:1115] Re: March Topic of the Month: Media Access Control

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 27 Mar 95 06:58:17 EST
To: netsig@tapr.org
Message-ID: <15021573.19db@ram.net>
Rendered body type: text/plain

>> >We need to pick topologies, three come to mind
>> >
>> >1) Random (Like 145.01)
>> >2) Hub (Bunch of users off one switch)
>> >3) Backbone
>> >
>> >#1 needs something based upon MACA
>
My reason for wanting to identify a set of topologies is that I feel that
the only way to insure that all tnc firmware suppliers implement these
protocols correctly is to have a daughter board that attaches between the
SIO and Modem to control access.

I am currently working on such a board, based upon the 8051 (I also like the
68hc11 and may switch back...). This is what I was driving at in [NETSIG:893]

>   I have read Phil's paper on MACA and put it where anyone reading
>this can get it (ftp.ucsd.edu in /incoming). I am going to implement MACA
>into the x1j node software since I have the source code for Dave's node.
>
>   MACA will be implemented as an additional SUPERVISORY packet. We
>have 4 now in AX.25 and a whole byte to work with, so no problem is seen
>defining a "Request to send" and "Clear to send" Bytes. It isn't clear to
>me now how to include the data information in a S packet. That may be a
>sticky wicket.

Look at the way FRMR is formatted
>
>   Also need a DOS based compiler that does CP/M. I have one but
>alas it is a pascal compiler and I need one for C. I have many shareware
>tiny-C compilers but they are too new! They were all ported over to DOS
>from CP/M...hi

look in ftp.ucsd.edu for hitech.zip
>
>-karl k5di
>

120. Re: [NETSIG:1115] Re: March Topic of the Month: Media Access Control

From: Jack Taylor <n7oo@huachuca-emh8.army.mil>
Date: Mon, 27 Mar 95 9:09:41 MST
To: netsig@tapr.org
Message-ID: <199503271617.KAA16620@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

An excellent bibliography Steve! I'd like to recommend the new ARRL
publication: "PACKET: SPEED, MORE SPEED and Applications", dated Jan 95,
available for $15 from U no who. This has a reprint of Phil Karns' June
94 QEX article "Toward New Link-Layer Protocols".

73 de Jack

121. Re: [NETSIG:1117] Re: March Topic of the Month: Media Access Control

From: srbible@cs.nps.navy.mil (Steven Bible)
Date: Mon, 27 Mar 95 10:58:30 PST
To: netsig@tapr.org
Message-ID: <9503271858.AA28746@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

Thanks for the recommend Jack. I saw the advertisment in the
April QST. I had fears that it was just a bunch of rambling
reprints, but I wanted to get it none the less.

Keep you eyes open for the June and July issue of QST. Greg,
WH6DT and I wrote a two part article on Amateur Radio and
the World Wide Web. Part introduces the Web and part two
shows you how to create the web on packet radio.

Thanks again, Steve N7HPR

122. 9k6 modem waveforms

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Tue, 28 Mar 95 15:02:48 CST
To: ham-digital@ucsd.edu
Cc: netsig@tapr.org
Message-ID: <9503282302.AA06725@ingersoll.com>
Rendered body type: text/plain

In my quest to improve the BER of the new 9600 baud link we are putting up
here, I discovered something that doesn't look quite right.
There are two modems involved, one TAPR modem, and one MFJ-9600 modem.

The xmit eye pattern being generated by the TAPR (new style) modem looks
beautiful, and is received 100% by the MFJ-9600 (G3RUH clone). However, the
xmit eye pattern being generated by the MFJ-9600 looks quite crummy compared
to the TAPR, and not all of the packets are received by the TAPR modem. Now,
I am monitoring the eye with a scope right at each modem's output, not after
the receiving IF, so the dirty pattern is at the output of the modem. None
of the other alternate waveform settings improve things either.

Anyone else have this experience with the MFJ-9600 modem? How clean should
the xmit eye pattern actually look?

The MFJ has had the XMIT switching mod done from the factory which allows tx
audio to be on 100% of the time. Any other mods floating around?
--
Dave Ewaldz INGERSOLL MILLING MACHINE CO.
N9HKM   Rockford, Illinois, USA

Internet   - dme@ingersoll.com
Ma-Bell   - (815)-987-6081
Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

123. Re: [NETSIG:1119] 9k6 modem waveforms

From: srbible@cs.nps.navy.mil (Steven Bible)
Date: Tue, 28 Mar 95 14:58:10 PST
To: netsig@tapr.org
Message-ID: <9503282258.AA15544@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

Dave, the latest TAPR PSR has a modification for the MFJ-9600.
Perhaps this will sovle your problem.

My experience (and others I have read about) the MFJ-9600 has
a low output and the signal will begin to distort as you
attempt to adjust the devation pot (VR1) higher.

Steve, N7HPR

124. Re: [NETSIG:1120] NETSIG digest 166

From: dme@ingersoll.com (Dave Ewaldz N9HKM)
Date: Wed, 29 Mar 95 08:00:05 CST
To: netsig@tapr.org
Message-ID: <9503291600.AA08592@ingersoll.com>
Rendered body type: text/plain

Steven Bible wrote:

>Subject: Re: 9k6 modem waveforms
>
>Dave, the latest TAPR PSR has a modification for the MFJ-9600.
>Perhaps this will sovle your problem.
>
>My experience (and others I have read about) the MFJ-9600 has
>a low output and the signal will begin to distort as you
>attempt to adjust the devation pot (VR1) higher.

I'll look at the mod in the PSR and see if it helps Steve, thanks.

I did notice the output distorts in the upper range of VR1 like you suggest.
However, I am running the thing with a d4-10 which only needs 50mv for 3khz
dev.,
& VR1 is at the lower range because of this. As a result, I added an
attenuator in the radio so VR1 could be cranked open a little.

Anyway, playing with a scope and VR1, the waveform is ugly about everywhere.

I'll have a look at the mod.

Sorry for de-railing the topic from media access.

A comment on that subject to get things back of track, and probably a stupid
question:
We could experiment with some of these concepts now, as the Germans have the
DAMA and Flexnet implementations available and there is plenty of software
to support some immediate experimentation. Why haven't any US hams played
with some of the German implementations? Differences in topologies? Language
barrier?

--
Dave Ewaldz INGERSOLL MILLING MACHINE CO.
N9HKM   Rockford, Illinois, USA

Internet   - dme@ingersoll.com
Ma-Bell   - (815)-987-6081
Packet ax25 mail - n9hkm@n9hkm.#ncil.il.usa.noam

125. eye patterns

From: n8nxf@hamgate.merit.edu
Date: Wed, 29 Mar 95 10:29:12 EST
To: netsig@tapr.org
Message-ID: <2822@hamgate.merit.edu>
Rendered body type: text/plain

Foregive my ignorance, but the subject of "eye patterns" seems to be
something I would like to know more about. I am in the process of
collecting the bits and pieces to put together a UHF, 9600 baud packet
system. This includes bits and pieces of information, not only hardware.

Could someone tell me about eye patterns and what is needed to create
one? A FAQ area where I can search for this info would be equally in-
formative. Thank you.
-Klaus (n8nxf@hamgate.merit.edu)

126. TOM: Media Access

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Wed, 29 Mar 1995 10:03:37 -0800
To: netsig@tapr.org
Cc: dme@ingersoll.com
Message-ID: <9503291802.AA13102@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

Dave Ewaldz N9HKM, saz ...

>A comment on that subject to get things back of track, and probably a stupid
>question:
>
>We could experiment with some of these concepts now, as the Germans have the
>DAMA and Flexnet implementations available and there is plenty of software
>to support some immediate experimentation. Why haven't any US hams played
>with some of the German implementations? Differences in topologies? Language
>barrier?

I have heard about DAMA; the question is "where can we read about it?" Is
there a document that explains the protocol?

73,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943

127. [NETSIG:1123] TOM: Media Access

From: Fredrik Bonde <e89_bond@etek.chalmers.se>
Date: Wed, 29 Mar 95 20:43:54 GMT-1:00
To: netsig@tapr.org
Message-ID: <9503291843.AA07138@quarl0.etek.chalmers.se>
Rendered body type: text/plain

Hi,

> I have heard about DAMA; the question is "where can we read about it?" Is
> there a document that explains the protocol?

Unfortunately I have no experience (but I'll get!). But try

ftp://ftp.funet.fi/pub/ham/packet/misc

and there for example tf27_10.zip. WNOS got it, and here is a
little about it from tfx.zip at funet.

73 de Fredrik

ARRL : 8th Computer Networking Conference - October 7, 1989 - page 203-209

DAMA - A NEW METHOD OF HANDLING PACKETS ?

by Detlef J. SCHMIDT, DK4EG Steinbrecherstr. 22 D-38106 BRAUNSCHWEIG

NORD><LINK e.V.
c/o Peter Glzow, DB2OS
Allensteiner Str. 5
D-30880 LAATZEN
Germany

Translation : Mark Bitterlich, WA3JPY
Reprint : Pierre Cornelis, ON7PC

Lately it seems we are hearing more and more stories about hams who are having trouble using their local node or digipeater. It seems that the user has no trouble hearing the digi, but the digi doesn't seem to hear the user at all. The symptoms almost match those where the receiver at the digi site is either dead or close to it. While that kind of failure is always a possibility, it is not the subject of this article.

The condition that this paper will talk about is one where the above symptoms do actually occur, but not from any lack of receiver sensivity. Instead it is due to the digi's receiver hearing too many signals all at once and the remote user pretty much gets lost in the "noise".

The reason for this becomes obvious when we consider that while all the users may hear the digi/node just fine, they in many cases don't hear each other. Thus in some cases, more than one station will transmit at the same time causing packet collisions. This situation is referred to as "a hidden station" problem, and for remotely located users access to his or her favorite digipeater become difficult to impossible during rush hour periods.

This is not a new problem, and in fact there are other services experiencing the same difficulties. A real world example is ships on the open sea trying to gain access to a communication satellite.

Several different experiments have been made to overcome this dilemma on amateur packet radio. One possible solution that is being pursued is through the use of full duplex digipeaters (BTMA), however there are several disadvantages to this approach. In a full duplex the hardware expense will normally be much higher and the system will occupy two frequencies but will only realize the maximum throughput of one. A better approach might be to increase the throughput by reducing the collisions on a single channel system rather than spreading the load onto two channels. It would be ideal if we could incorporate a system that did this with something so minor as software change (such as replacing the EPROM in a TNC) or by changing some operational parameters.

One of the methods used that attempts to solve the hidden station problem while still using a single frequency is called DAMA (Demand Assigned Multiple Access). A description of this method follows.

In a connection oriented protocol environment, an end user will try to connect to the master (satellite) by means of a slotted ALOHA method (channel access without any coordination). Collisions might occur during this phase but they are tolerable since they are relatively rare. Once a connect request is recognized by the master, the connecting stations identification is added to the polling list and from this point on the master controls all connected stations. Permission to send data is granted by means of polls which might be included in ACK packets or even in transferred data frames. so in this case a user will only be allowed to transmit after receiving "permission" in the form of a poll sent from the master station. Once permission is granted several frames might be transmitted in a block. However, if the user does not respond within a given time frame (say around 1/2 second) then the master assumes that the poll got clobbered or the user never received it for some reason. The master then passes permission to to transmit to all other active stations

and when completed comes back to the first user and gives him another chance.

On the other hand, if the user (slave) actually receives the poll and replies with sent I frames, the master will not acknowledge them until the next time around after serving all the other active stations. If when polled by the master, the user responds with an empty frame (Receive Ready/Final), then the master will reduce the user in polling priority and will skip him on the next time around.

As the activity on the frequency increases, the polling priority of inactive users might be further decreased, but when these stations respond with an I-frame they will again regain their original priority.

If you understand the description just given, you might think that you are reading about AX.25 level 2 protocol and this is why DAMA has a chance of working over amateur packet radio. AX.25 L2 provides all the protocol elements that are needed to implement DAMA and no new syntax is required. Most of the new functions required could be obtained simply by patching existing operational parameters while the rest could be achieved by making some minor changes to the TNC's firmware.

So how do we actually go about incorporating DAMA using AX.25 protocol ?

Due to the fact that there are no new syntax elements required, the following description will only use standard AX.25 terms. Since CSMA (Carrier Sense Multiple Access) as well as DAMA is used, please interpret all future references DAMA as CSMA-DAMA. The term "poll" used throughout this text in no way refers to the poll bit in the control field of packet frames and this bit remains unchanged to ensure compatibility. The different phases of the protocol will be described separately below.

Connect Establish :

When a node attempts to connect to a user, the node adds the users ID to it's polling list and begins to send SABMs to that station. If after a certain amount of tries no UA is received, the user is assumed to be inoperable and is removed from the polling list.

When a new user starts a connect sequence to the node, he begins by sending SABMs to the master in a simple CSMA manner duplicating the existing method used today. Collisions are possible during this phase, so it might be necessary to repeat the SABMs several times until the node replies with a UA. Once the node recognizes the users connection attempt, the users ID is added to the polling list in a fashion very similar to the one used by TheNet nodes (TheNet userlist) and the node (master) is now in control of the uplink users station. After the user sends SABMs and the node replies with a UA, the user replies with an RR0 to signal to the node that it had a successful reception of UA.

Idle state :

As long as no information transfer occurs between user and node, (idles) then the node sends its polls as an RR with the corresponding count. If the response by the user is just an RR#, then the time until the next poll to the user will be lengthened to avoid unnecessary channel load. The exact amount of time added is determined by the total channel activity.

If information transfer by other users on the node is high (as determined by the number of I-frames being sent) then the amount of time added before the next poll occurs to an inactive station is longer than in cases where there is only very little channel activity. Thus when the frequency is basically clear, the waiting times are reduced to a minimum so that no decrease in channel throughput takes place. This is the principle of the self-alignment mechanism of DAMA, where a channel is always regulated to insure its maximum possible throughput.

If the node ever fails to receive an RR from the user (due to a collision of the nodes poll or the users RR response) then the node will proceed on to the other stations on its polling list. The node will come back and try this station again after all the other users on its list have been serviced. If after a certain number of transmitted polls this station still has not answered, then it is considered to be unavailable by the node and is dropped completely from the list. This is analogous to those "keep-alive polls" that we have today.

Data transfer : Node --> User :

There is no difference between regular CSMA and DAMA in this case. Because it is always up to the master (node) to act first, it could send one or more I-frames or a poll to the user. The user will acknowledge I-frames immediately with an RR#, but could also send its own I-frames with the corresponding count (having to correct the count on the sent I-frame serves the same purpose as an ACK with AX.25). The meaning of the Poll/Final bit remains unchanged.

Data transfer : User --> Node :

As mentioned before, the node will send polls to all users that are uplinked to it and the user will not respond until it receives this poll or an I-frame from the node. It may be wise to point out that when a user is polled he must always come back with some kind of response, even if it is an RNR#. If the node fails to hear any kind of response from the user then it assumes something went wrong (such as a collision) and moves on to the next user on its polling list.

This method of always waiting for a poll before transmitting is the central aspect used to avoid collisions in a situation where hidden stations exist. This is in contrast to the usual CSMA method where several stations can actually transmit at the same time. Additionally the problem of deadtime collisions is resolved. Deadtime refers to the period from when the TNC realizes the channel is free and starts transmitting, to when he has been on the air long enough for other TNCs to recognize his carrier. This is really not a rare case, as exemplified by the case where two or more TNCs are waiting for a digipeaters carrier to vanish so that they can leap on the frequency. Using DAMA the node will not acknowledge received frames the instant it hears them. Instead it will first service all other uplinked stations and then come back with an RR# to the sending stations I-frames along with a poll to that station. This poll basically says "Have you got any else for me ?".

Disconnecting :

If the master intends to cut the connection, it will send the usual DISC-frame to the user. The user will then promptly respond with the UA-frame (final bit set). If the node fails to receive the UA and again sends a DISC-frame, the user will respond with a DM-frame. This is identical to the actual CSMA version.

When the user wants to disconnect from the node, he will wait to send his DISC-frame until polled by the master. AT this point it makes no major difference whether the node responds to the user right away with a UA or goes through another polling cycle to do so, however an immediate UA is preferred.

UI-frames :

In CSMA as well as in a DAMA environment, the UI-frames are treated in a special way. I.E. These frames are used to carry some information besides the regular protocol traffic. Normally UI-frames are never sent from a user to a node, and it is not good headwork to make a habit of making UI-frame direct QSOs on the input frequency of a node. However, in contrast to a duplex system, it is possible to actually do this. So although the rare UI-frames will reduce the throughput to the CSMA value, it will not drop the much lower ALOHA value that would occur with a duplex digi having a QSO on its input frequency. UI-frames originated by the node are no problem since all stations receive these frames.

Other protocol elements :

So we have gone from the beginning to the end in describing a complete DAMA session. We have not translated each and every AX.25 element into one that has a special significance to DAMA. This is not required since many of them will keep their initial meaning. DM, RNR, REJ, etc will all be used as they were before. The only deviation from the pure CSMA version is in the fact that the users will only be allowed to transmit these frames after receiving permission from the master (node) in the form of a poll. The node will only transmit these frames after all other users on its list are served by completion of one polling cycle.

Compatibility of DAMA and CSMA :

One advantage of the DAMA method is that it does not require everybody to change everything all at once. However as additional users convert their TNCs to work with DAMA the more pronounced will become the increase of throughput. Even stations that are waiting to switch over could help to increase the areas throughput by changing a few operational parameters. For example the delay between the reception of a frame and the TNCs response (sometimes called T2 or DWAIT) should be reduced to a value under 1 second. In addition the time interval from when an I-frame is sent to when the TNC sends an RR# to ask for a pending ACK, should be set to a value that is clearly higher than the time between two polls of the master (usually more than 30 seconds at 1200 Bd).

To fully benefit from DAMA both the node and the user must work together in the master/slave relationship. Assuming that the users TNC is capable of both the normal and the DAMA mode, there still remains the problem of how to tell the user to "turn DAMA mode on". There are several ways that this could be done:
1. Automatic detection of the protocol version by means of the protocol identifier byte or reserved SSID-octet-bits of the node (preferred version).
2. Implementation of a channel specific parameter which controls the protocol version.
3. Implementation of a new UPLINK command besides the current CONNECT command.
4. Implement a further protocol element such as a SABM-frame (similar to X.25) so that at connect time the node could alert the user to the increased features.

In case #1 of the above it would be sufficient to tell the user to switch DAMA mode only once, at connect time. This state would then remain in effect until disconnect. However since there is no PID field in SABM-frames this information has to be carried in some other way, such as utilizing the dormant bit 5 of the master's SSID address field. It is proposed that DAMA test versions set this bit to 0 to convey the necessary information to the users TNC.

Conclusion :

The existing AX.25 version was established in 1982 when packet radio was not widespread as it is today. Most stations in the beginning were pretty much equal and there was no distinction made between DTE and DCE functions. However with the implementation of wide area networks not all stations are performing the same function. In fact today the network nodes are acting in DCE function considering their control and information exchanging aspects. These functions will be better served with the implementation of DAMA.

The methods discussed in this article could increase the throughput on an AX.25 channel tremendously. One advantage is the avoidance of system breakdown which occurs with channel overload. Using DAMA, the throughput will increase continuously up to its maximum. There is no foldback effect like that which occurs using CSMA where at a special limit (above ca 60%) the throughput is actually reduced.

There is also a strong "social" aspect of DAMA wherein even the weak stations can work through the node reliably without being overpowered by stations close to the node.

It is possible to make direct connections with other HAMs on the uplink frequency unlike that of a duplex system. In addition the users TNCs still retain the digipeater capability inherent in our present simplex system. All protocol elements keep their original meaning which allows both versions to be utilized on the same frequency, yet throughput increases as more and more users switch over to the new method.

Literatur

Fox,T.	AX.25 Level 2 protocol specifications	AMRAD
Kauffels,F.J.	Lokale Netze	R.Mller Verlag
Mahle,C. Hyde,G Inukai,Th.	Satellite Scenarios and Technology for the 1990's	IEEE J. on selected Areas in communication May '87
Schmidt,D.J.	DAMA, ein neues Verfahren fr Packed-Radio?	cq-DL, 4/89

```
 Schmidt,D.J.  Synchrone DF-Protokolle mit 6809-Micro- TU-Script BS '81
               Computern in heterogenen Sternnetzen

 Tanenbaum,A.  Computer Networks                        Prentice Hall Verlag

------------------------------------------------------------ July 24, 1992 ---

Note by DB2OS: The full DAMA protocoll is implemented in the latest
               version of TheNetNode (TheNet for PC) as a DAMA MASTER
               and TheFirmware (WA8DED Hostmode for TNC2) as a DAMA
               SLAVE by NORD><LINK. DAMA is also supported by TFPCX, a
               resident AX.25 software TNC for the PC (only external
               Modem required, no TNC) and by TFKISS (former TFPCR).
               TFKISS emulates a TNC with TheFirmware and any TNC
               can be used if it can be switched into KISS-Mode!!!
               DIGICOM and BAYCOM Software also now supports DAMA.
               DAMA is now used on several german TNN digipeaters and
               the results are of great promise.


       ------------------------------------------------------------

    I likhet med Mozart, Beethoven och en kille som heter Gustavsson
      i ]motfors, har jag vikt mitt liv }t musik.
                                                    M B Tretow

 Chalmers   I  Fredrik Bonde          I  e-post: e89_bond@etek.chalmers.se
 Tekniska   I  Gibraltargatan 82-149  I  packet: SM6UBC @ SK6YW.O.SWE.EU
 H|gskola   I  412 79 G|teborg        I     tel: +46-(0)31-20 88 76
            I  SWEDEN                 I

       ------------------------------------------------------------
```

128. TAPR 9600 @19.2

```
From: Sperry Davis <sperry@pinn.net>
Date: Wed, 29 Mar 1995 15:12:41 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950329150428.3120A-100000@everest>
Rendered body type: text/plain
```

Does anyone have information on the parts changes to the analog
portion of the TAPR modem for operation at 19.2k and above.

thanks,

Sperry/n4sd
  InterNet: sperry@pinn.net
  Amprnet: n4sd.ampr.org [44.62.64.40]
  PBBS: N4SD@WD4MIZ.#TIDE.VA.USA.NOAM

129. Re: [NETSIG:1125] TAPR 9600 @19.2

```
From: jra@ag9v.ampr.org
Date: Wed, 29 Mar 1995 20:02:10 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199503300102.UAA00148@ag9v.ampr.org>
Rendered body type: text/plain
```

Sperry --

I haven't changed the analog portion, but I have reworked the modem for 19.2
in a digital mode (to drive the Kantronics D4-10 TTL port). I posted that
info a few months ago, and if it's of interest I can mail it to you.

John

You (Sperry Davis) write:
>
>
> Does anyone have information on the parts changes to the analog
>portion of the TAPR modem for operation at 19.2k and above.
>
>thanks,
>
>Sperry/n4sd
> InterNet: sperry@pinn.net
> Amprnet: n4sd.ampr.org [44.62.64.40]
> PBBS: N4SD@WD4MIZ.#TIDE.VA.USA.NOAM
>

```
--
John Ackermann   AG9V
Internet:  jra@ag9v.ampr.org
Packet:    AG9V@N8ACV.#DAY.OH.USA
```

130. 900 MHz Mitrex?

```
From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Fri, 31 Mar 1995 09:59:05 -0800
To: netsig@tapr.org
Message-ID: <aba1f1f90a021004de03@[129.46.12.181]>
Rendered body type: text/plain
```

I have a source for 9 mitrex 800/900 MHz radios with digital squelch (?)
and a couple of Syntaur radios. I am not familiar with these at all.

Would they make good packet or link radios?
Does anyone have any information on a Mitrex radio for the 800-900 MHz
band? Are these good radios for linking in the 900 portion of the amateur
band?
Can they be modified for wide band operation for 9600bps packet?
How much should they be worth?
Are they worth converting for this band, or is there going to be problems
with this frequency for packet due to shared spectrum?

All information welcome. (And soon, they may vanish.)

Thanks in advance.

Marvin - WB6PKK
mmunster@qualcomm.com

April 1995

Original source file: netsig.9504
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9504

1. Radical new Packet

From: Klarsen <k5di@acca.nmsu.edu>
Date: Tue, 4 Apr 1995 15:32:40 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950404153055.23626A@acca>
Rendered body type: text/plain

Hello Ham Packet Radio users. I was today shown what in 17 years will be "standard television". It is very high definition television pictures with 4 audio channels so you can have the best possible sound. These television stations will send all this stuff to our home using radio frequencies and from mountain tops send the signal to millions of receivers.

The real shocking thing is that the "new" method of getting all this data to the tv viewer has been in common use by Hams for many years! We just didn't do it all together towards the same goal. The new television standard is still a 6 MHZ channel like right now, but the transmission method will be the same old one used now for the video signal, which is single sideband suppressed carrier, and do away with the current FM audio channel. The single sideband suppressed carrier (ssb) in the new system will use the entire 6 MHz bandwidth and will have a "pilot carrier" that allows the receiver to add the "carrier" back in with accuracy.

And the picture and sound is pure digital! They are both sent to the receivers as digital information. And guess what? All this data is sent in PACKETS. Each packet has 8 bytes of "information" and the rest of the packet, about 200 bytes, sound familiar? is data. The packets are sent fast to your TV.

To increase the data transfer the digital data will have 8 amplitude levels. In this way, much like our high speed telephone modems, we get 4 times the data transfer you get if every pulse has the same amplitude.

So what does this have to do with Ham Radio? Well it should cause us to look at what we now do and consider changing to a packet transmission method that is receiving millions of dollars of research as I write this. I think we should look at Amplitude Modulation again. We should look at Trellis methods of increasing bit rate over baud.

This means new radios. Off with the old HT or Motorola Police radios that we use now. The new radios, say for 2 meters will be a digital low band transmitter on say 30 MHz. This then is moved to 145.01 MHz with a "transverter" that is linear and after this is the "linear amplifier" to say 10 watts. The reciever will have a simple AM type of demodulator and then some digital processing and the received digital data comes out directly to your computer! No more "TNC" types of equipment.

How fast can we go? Well on 2 meters we can have 20 KHz of bandwidth and, if we use the new TV system we should get about 56,000 bits/second in that bandwidth! As you know, we now creep along at 1200 baud in that same channel.

Do not think that the current packet systems, based on a 1970's telephone modem and old FM radios is going to be the end of Amateur Radio Packet. It HAS been for 10 years now but the time is NOW to design a new radio and make small changes to the AX.25 protocal. Believe it or not, the new TV system uses packets not at all different from AX.25 protocal.

I wish to thank co-workers at the Army Research Laboratory who are members of IEEE and bring to my attention what's going on in the world. It is exciting.

73, de karl k5di

****

```
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory              *
 *                                                                           *
 *****************************************************************************
```

2. Re: [NETSIG:1128] Radical new Packet

From: Rob Mayfield <mayfield@guest.adelaide.edu.au>
Date: Wed, 5 Apr 1995 10:55:16 +0930 (CST)
To: netsig@tapr.org
Message-ID: <9504050125.AA22611@wattle.itd.adelaide.edu.au>
Rendered body type: text/plain

*** Klarsen spoke regarding HDTV ....:
>   This means new radios. Off with the old HT or Motorola Police
> radios that we use now. The new radios, say for 2 meters will be a

But it's much easier to mod and mount a maxar in a rack, than a 28" Sony ?? :-)

Rob

3. :Anyone know how to remove Michaelangelo virus

From: Daniel Audet <daudet@LLC.org>
Date: Tue, 4 Apr 1995 22:50:19 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199504050250.WAA26571@biko.llc.org>
Rendered body type: text/plain

Hi every one
i got Michael angelo on my other pc
MSAV does detectec it but cant clean it.
it says that the virus is in drive C:
SCAN 213 does not detect it
i did boot with a clean dos and use a clean diskette with scan on it.
any suggestions ?
thank to all
Daniel
ve2pnk @ va2bbs

4. Re: [NETSIG:1129] Re: Radical new Packet

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Wed, 5 Apr 95 10:44:28 -0400
To: netsig@tapr.org
Message-ID: <9504051444.AA13096@nadc.nadc.navy.mil>
Rendered body type: text/plain

The difference in broadcast (or modem) and amateur is that at least at
the user level transmissions are short and between many different sites.
The precludes (or greatly complicates) the training and sync that is
needed for these types of systems. For point to point full duplex
channels this is do'able now using modem chip technology. All you need
is a 3Khz bandwidth (telephone quality) audio channel in BOTH directions
(full duplex) and you have 56K or 128K compressed digital transmission.

Using gunplexors or low power vhf/uhf highly directional sites you could
establish this 'always on' full duplex channel between any two sites.

Doug

5. SCADA Systems

From: rwhiting@winternet.com (Rick Whiting)
Date: Wed, 5 Apr 1995 11:02:18 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <m0rwXX8-000QlQC@subzero.winternet.com>
Rendered body type: text/plain

I'm looking for information on SCADA systems which I understand are used
for communications over high voltage power lines. Any info or pointers
to sources will be appreciated. Thanks.

73/Rick W0TN <rwhiting@winternet.com>

6. Re: [NETSIG:1131] Re: Radical new Packet

From: nielsen@primenet.com (Bob Nielsen)
Date: Wed, 05 Apr 1995 09:22:08 -0700
To: netsig@tapr.org
Message-ID: <199504051621.JAA17722@mailhost.primenet.com>
Rendered body type: text/plain

Doug Crompton wrote:

>The difference in broadcast (or modem) and amateur is that at least at
>the user level transmissions are short and between many different sites.
>The precludes (or greatly complicates) the training and sync that is
>needed for these types of systems. For point to point full duplex
>channels this is do'able now using modem chip technology. All you need
>is a 3Khz bandwidth (telephone quality) audio channel in BOTH directions
>(full duplex) and you have 56K or 128K compressed digital transmission.
>
>Using gunplexors or low power vhf/uhf highly directional sites you could
>establish this 'always on' full duplex channel between any two sites.

I have been talking to others in a regional linked uhf voice system about possibly using a few channels on a multiplexed microwave linking system for packet. We had thought about getting 9.6k or 14.4k four-wire modems for this, but the higher speeds would be certainly preferable. Can anyone give me pointers as to what to look for to use on voice-bandwidth full duplex channels?

Bob

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@w6swe.ampr.org
WWW: http://primenet.com/~nielsen/

7. Re: [NETSIG:1133] Re: Radical new Packet

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Wed, 5 Apr 95 14:22:22 -0400
To: netsig@tapr.org
Message-ID: <9504051822.AA06024@nadc.nadc.navy.mil>
Rendered body type: text/plain

Bob,

I suspect that any good phone modem could be used. I have never done it but once they establish connection that will retrain and change quality dynamically based on the line quality. The hitch is to get past the phone connection part - dial and ring - You use to be able to do 'AT' commands to bypass this - I.E. go right into answer or originate modes. I am sure there are people using these things on dry lines now outside of amateur radio. I would also be interested in hearing from anyone who may has or is dong this.

Doug

8. Re: [NETSIG:1128] Radical new Packet

From: bruce@pixar.com (Bruce Perens)
Date: Wed, 5 Apr 95 11:56 PDT
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <m0rwaG0-00063NC@mongo.pixar.com>
Rendered body type: text/plain

From: Klarsen <k5di@acca.nmsu.edu>
> The new television standard is still a 6 MHZ channel like
> right now, but the transmission method will be the same old one
> used now for the video signal, which is single sideband suppressed
> carrier, and do away with the current FM audio channel. The single
> sideband suppressed carrier (ssb) in the new system will use the
> entire 6 MHz bandwidth and will have a "pilot carrier" that allows
> the receiver to add the "carrier" back in with accuracy.

> And the picture and sound is pure digital! They are both sent
> to the receivers as digital information.

The only reason this works for high resolution is that the information is highly compressed with "lossy" compression (i.e. the kind that won't work for text). The compression takes advantage of the fact that there is lots of information in the picture that is ignored by the human perceptual system. I've seen this technology at ARPA meetings, Siggraph, etc. for the past few years, and Pixar has been active in video compression research.

The transmission system uses the same tricks as telephone modems. The same limitation that telephone modems have is in place: equalization requires a training sequence that's longer than your typical packet. This means that a full-duplex connection or continuous broadcasting is required to make it work.

That's why lots of people point out that really high-speed packet requires dedicated point-to-point links. For big shared-access CSMA/CD networks, you can't use some of these tricks.

Bruce AB6YM
--

Attention Ham Radio Operators: For information on "Linux for Hams", read the World Wide Web page http://www.rahul.net/perens/LinuxForHams

9. Re: GRAPES/PI2 Interfacing (fwd)

From: Rick Whiting <rwhiting@winternet.com>
Date: Wed, 5 Apr 1995 15:16:41 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199504052016.PAA09936@klondike.winternet.com>
Rendered body type: text/plain

The following is a msg I sent to Barry, VE3JF, along with his reply. Any node stack gurus out there that can help me on this?

> > Barry, as Chairperson of our LAN (MAN!) group that's working on upgrading
> > MAN facilities I'm about ready to recommend using a GRAPES/PI2-based
> > full-duplex cross-band repeater to serve as the high speed backbone.
> > However, since we plan to locate the GRAPES/PI2-based repeater at the
> > same site with a significant amount of other node switches it seems like
> > it would be a good idea to interconnect the repeater directly with the
> > existing node stacks.
> >
> > The existing node stacks consist of three X1J/TNCs diode matrixed on
> > their serial ports and three ROSE/TNC's connected on their serial ports
> > with PacComm Coax LAN. One of the XJ1 nodes and one of the ROSE nodes
> > are connected to a radio one one channel with mixing/splitting at the AF
> > level. Also one of the ROSE nodes is wired to an X1J node on the radio
> > ports to make the interconnection between these two switches. Also one
> > of the ROSE nodes is connected to a land-line data channel (wormhole) to
> > various other citys/states. Wish I could show a diagram, but I hope you
> > get the idea.
> >
> > Anyway, is it practical to directly interconnect the PC/PI2 supporting
> > the 56K GRAPES-based repeater with the existing node stack (switches)?
> > As you can see, I'm not all that familiar with the software side of the
> > PC/PI2 switch (having only delt with the TNC-based switching).
> >
> > Comments and suggestions would be appreciated. The interconnection of
> > the high speed backbone repeater with the existing node switches is the
> > only open issue in our plan.
>
> In principle, you should be able to tie the PC (via a serial port) into the
> X1J stack, since NOS can be configured to talk NRS (the netrom back-to-back
> protocol) on a serial port. But I haven't done it, so you should ask around
> on one or two of the mailing lists for advice on how to hook it up. You
> could always use a pair of back-to-back TNCs as in your X1J-ROSE hookup,
> but that seems messy... check out the other approach first. Note that you
> could probably use the B port on the PI2 card to replace one of the X1J TNCs
> in your node stack. That way you wouldn't have to expand the diode matrix
> when you add the PC. You need some advice from a node stack guru... we don't
> use 'em around here.
>
> Barry

Thanks. 73/Rick W0TN <rwhiting@winternet.com>

10. Re: [NETSIG:1133] Re: Radical new Packet

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 5 Apr 1995 17:35:35 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950405172916.6228A-100000@acca>
Rendered body type: text/plain

On Wed, 5 Apr 1995, Bob Nielsen wrote:

> Doug Crompton wrote:
>

> >The difference in broadcast (or modem) and amateur is that at least at
> >the user level transmissions are short and between many different sites.
> >The precludes (or greatly complicates) the training and sync that is
> >needed for these types of systems. For point to point full duplex
> >channels this is do'able now using modem chip technology. All you need
> >is a 3Khz bandwidth (telephone quality) audio channel in BOTH directions
> >(full duplex) and you have 56K or 128K compressed digital transmission.
> >
> >Using gunplexors or low power vhf/uhf highly directional sites you could
> >establish this 'always on' full duplex channel between any two sites.
>
> I have been talking to others in a regional linked uhf voice system about
> possibly using a few channels on a multiplexed microwave linking system for
> packet. We had thought about getting 9.6k or 14.4k four-wire modems for
> this, but the higher speeds would be certainly preferable. Can anyone give
> me pointers as to what to look for to use on voice-bandwidth full duplex
> channels?
>
> Bob
>
> -------
> Bob Nielsen   Internet: nielsen@primenet.com
> Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
>   WWW: http://primenet.com/~nielsen/
>
>
>
>

Hi Bob, my paper was not about the old analog microwave junk we can get now, but rather about a whole new modulation and data system! We will have to junk the old radios for parts to build a radio not unlike the Heveraving radio of the old 56k baud days. It will allow very high bit rate on 2 meter packet.

I will be working on this with others and stealing ideas and such from the young engineers that are testing the new tv system. Much more when I learn it!

11. Interfacing TAPR DEV MTR to Radio Shack Scanners

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Wed, 05 Apr 1995 16:51:02 -0700
To: netsig@tapr.org
Cc: tapr-bb@tapr.org
Message-ID: <9504052350.AA08056@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

I've successfully built my DEV Meter, now I need a scanner to house it.

I just received a Radio Shack sales flier in the mail yesterday. These three scanner models are on sale:

#20-306DF - 10 channel memory handheld - $99.99 (save $20)
#20-503DF - 16 channel memory handheld - $149.99 (save $30)
PRO-2038 #20-413DF - 50 channel memory portable - $149.99 (save $50)

Has anyone interfaced the TAPR DEV Meter to any of these? Is it worth my time trying to interface to any of the three?

(No the PRO-508 is not for sale, darn it! And the Winter 95 issue of the PSR had the mod!)

Thanks,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943
NPSARC - http://www.sp.nps.navy.mil/npsarc/k6ly.html

12. [NETSIG:1132] SCADA Systems

From: WCHAST@delphi.com
Date: Wed, 05 Apr 1995 23:26:42 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HOZX9RU5MA8WXJXM@delphi.com>
Rendered body type: text/plain

Rick are you looking for data on "carrier current" (the RF actually travels on the power lines, or are you looking for the type that uses VHF or UHF links to send commands to switch or do other control functions on the power line?

Chuck.

13. Re: [NETSIG:1139] SCADA Systems

From: willi_r@mail.uwlax.edu (Rick Williams)
Date: Thu, 6 Apr 95 11:47:35 -0500
To: netsig@tapr.org
Message-ID: <9504061647.AA04703@mail.uwlax.edu>
Rendered body type: text/plain

>Rick are you looking for data on "carrier current" (the RF actually travels on
>the power lines, or are you looking for the type that uses VHF or UHF links
>to send commands to switch or do other control functions on the power line?
>
>Chuck.
>
>
Am I the correct addressee? I don't recall requesting this info. But thanks
anyway.

Rick Williams, KV9U

14. Re: [NETSIG:1131] Re: Radical new Packet

From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 6 Apr 1995 11:56:22 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950406113022.17934A-100000@acca>
Rendered body type: text/plain

On Wed, 5 Apr 1995, D. Crompton wrote:

> The difference in broadcast (or modem) and amateur is that at least at
> the user level transmissions are short and between many different sites.
> The precludes (or greatly complicates) the training and sync that is
> needed for these types of systems. For point to point full duplex
> channels this is do'able now using modem chip technology. All you need
> is a 3Khz bandwidth (telephone quality) audio channel in BOTH directions
> (full duplex) and you have 56K or 128K compressed digital transmission.
>
> Using gunplexors or low power vhf/uhf highly directional sites you could
> establish this 'always on' full duplex channel between any two sites.
>
> Doug
>
>

Doug, as I at least wanted to get across is the idea of using SSB on 145 and 220 and 440 MHz and keeping the current AX.25 protocal will give us a HUGE increase in data flow over what we can now get using FM as we now do.

Consider this: The new TV system will be sending out on SSB in the 460 MHz tv band what we hams call UI packets, those which are not acknowledged by anyone! There will be no error correction possible except perhaps some new FEC concepts.

We can send our current type and use error control. With this differance we can use more traditional FEC and expect to get even higher data rates/bandwidth.

I do at this time think that with SSB on 2 Meters we can in the 20 KHz bandwidth with the current "baud" regulations get an actual data rate of at least 56,000 bits/second! It may be possible to run twice this speed but it may take additional expense that hams will not be willing to pay.

But I can say as fact that I must go back to my old college books and re-learn what I once understood about amplitude modulation. And then I will plug this information into MathCad 5 and do many analytical calculations that were impossible in 1960. Then I might be up with the young guys that have designed the new digital tv.

As others have said, it doesn't take help from 100's to make a change for the better. I plan to present here verifiable data supporting what the new system will do. Now I must get back to work. Lunch is over...

```
 ***************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
```

```
*                                                                          *
*  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet     *
*    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12    *
*                                                                          *
*        Electrical Engineer with the Army Research Laboratory             *
*                                                                          *
****************************************************************************
```

15. Re: How to contact PacComm by Mike@lurpac.lancs.ac.uk

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 06 Apr 95 08:35:20 UTC
To: mike@lurpac.lancs.ac.uk
Message-ID: <2383@paccomm.com>
Rendered body type: text/plain

The TEKK Micro has the part number KS-900 (450-470 MHz) and KS-900L
(430-450 MHz).

The TEKK Mini has the part number KS-960 (450-470) and KS-960L (430-450).

The Micro is the one most people use. It was the first design and has
a better chance of working at 9600 than the 960. 960 model has a
received signal strength indicator and some other features for use
with a commercial modem TEKK puts in the case. It does less well
at 9600 (unmodified) than the KS-900.

We marketed these radios for several years, but then TEKK started selling
direct to hams at wholesale prices. We can't afford to resell at zero
markup and be in the 'warranty loop' so we stopped selling them except
to certain old customers.

We stock good digital filters which fit either radio, in D width for
9600 and C width for 19.2. A filter set sells for $35 (9600) or $39 (19.2).

You can order TEKK radios directly for about $120. I'm not sure of
their pricing policy to end users on selecting your exact frequency,
but we buy them that way (for integration into RF modems) all the
time.

What PacComm sells are the TEKK radios with the filter kit already installed.
KS-900L-D96 (for good 9600) is $230. KS-900L-D192 (for 19,200) is $235.
KS-960L-D96 (the Mini) is $250 and the KS-960L-D192 is $255.

An amateur can save money by purchasing the radios and filters and making
the filter change himself. Free labor vs paid labor. You might even be
able to find the filters elsewhere for less. We searched long and hard
to locate these filters and had to buy a large quantity to even get
delivery. Since that time, they may have become more easily/widely
available. We have our stock, so we stopped looking around.

International orders are just about as easy as local ones. Send e-mail
or a fax with what you need, your shipping address, and a credit card
number. For specialist items such as the above, its better to go
direct than to try to work through a dealer.

73,
Gwyn

```
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Gwyn Reedy, W1BEL      gwyn@paccomm.com       W1BEL@amsat.org

+(813) 874-2980        Fax:+(813) 872-8696    BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618
```

16. [NETSIG:1140] Re: SCADA Systems

From: WCHAST@delphi.com
Date: Thu, 06 Apr 1995 20:30:38 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HP15EWOF148ZFL6H@delphi.com>
Rendered body type: text/plain

Hmm Something must have gotten screwed up somewhere.

Sorry about that.

17. Motorola Radios

From: "Ronald D. Hackett" <rhackett@crl.com>
Date: Fri, 7 Apr 1995 18:13:29 -0700 (PDT)

To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950407181057.4234B-100000@crl3.crl.com>
Rendered body type: text/plain

I've recently found a small quantity of Motorola HT440 radios for $10 each.
Can these radios be modified to run 9600 or 19.2k packet? Where can I get
information and schematics on modifying these radios? Thanks.

73 de Ron
n8naa


```
*******************************************************************************
Ronald D. Hackett              Internet:      r.hackett@ieee.org
The Packet Rat BBS             Packet Radio:  N8NAA@K3WGF.#SAT.TX.USA.NOAM
San Antonio, Texas, USA        AMPRnet:       n8naa@n8naa.ampr.org
Data/Fax:  (210)494-2849       Fidonet:       1:387/340
*******************************************************************************
```


18. 219-220 MHz Allocation

From: Jim Fortney <fortney@lcsipdp.litton.com>
Date: Mon, 10 Apr 95 03:08:58 PDT
To: TAPR NETSIG <netsig@tapr.org>
Message-ID: <Chameleon.4.01.3B.950410031000.fortney@>
Rendered body type: text/plain

Unless I missed the message, I don't think that anyone here has announced
about our recent success with the FCC. Thank you to all of you who
worked on making this effort a success....

On March 14, 1995, the FCC adopted a final Report and Order on ET Docket
93-40. Effective April, 23, 1995, a new segment will be added to
the Amateur 220 MHz Band. This 1 MHz segment (219-220 MHz.) is being
granted on a secondary basis for point to point digital message
forwarding services. The ARRL 219 MHz Committee plan designates 10
100 kHz. channels for high speed digital communications.

Since this is a secondary allocation, there are special rules for
coordinating operations with the primary users but most of the band is
expected to be available in much of the U.S. Individuals or groups
desiring to make use of the Band are encouraged to obtain a copy of the
Report and Order before taking any steps to occupy the segment. The ARRL
will serve as a clearing house of licensing information to assist local
coordinators and prospective occupants.

This allocation provides us an opportunity to pursue BAUD rates of 56 kB
and above at frequencies where reasonable distances can be achieved. Our
chalenge now is to develop the systems that will make good use of the
spectrum. The RF developers have the first task.

ENJOY!


```
*******************************************************************************
Jim Fortney, K6IYK@K6IYK.#SOCA.CA.USA.NOAM, fortney@litton.com
Member, ARRL 219 MHz Committee
President, Valley Emergency Radio Association (VERA)
President, 220 MHz. Spectrum Management Assn. of So. California (220SMA)
President, Litton Amateur Radio Society (LARS)
State Director, Southern California Army MARS
*******************************************************************************
```


19. New level 2 protocol

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 10 Apr 95 16:18:02 EDT
To: netsig@tapr.org (netsig TAPR)
Message-ID: <15021573.1a44@ram.net>
Rendered body type: text/plain

What is the status of the new (proposed?) link level protocol?

When will it be available for developers to review?

tom

20. Re: [NETSIG:1146] New level 2 protocol

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 10 Apr 1995 18:52:53 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199504102352.SAA15220@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

You should contact Bill Beech about this. Last time I checked with the
ARRL on the issue - they still had not received the updated information.

bbeech@huachuca-emh8.army.mil

Cheers - Greg

According to Tom Moulton:
>
> What is the status of the new (proposed?) link level protocol?
>
> When will it be available for developers to review?
>
> tom
>

21. [NETSIG:1106] 9600 Modem

From: steve.diggs@totrbbs.radio.org (Steve Diggs)
Date: Mon, 10 Apr 95 21:33:00 -0500
To: netsig@tapr.org
Message-ID: <2147.9.uupcb@totrbbs.radio.org>
Rendered body type: text/plain

Date: Tue, 21 Mar 1995 19:34:58 -0600
Reply-To: emory!tapr.org!netsig
From: wa4mei!emory!kd6oat.ampr.org!kd6oat

Hi everyone. I am not subscribed here so I would appreciate a direct response
from whoever wishes to help me out. I just assembled a TAPR 9600 modem and
am waiting for a PI2 card that is on order. I have a TEKK KS-960 sitting on the
shelf and am currently running 1200 baud on 2m using a PK-232MBX. I think I hav
some choices with respect to where and how the 9600 modem is located and would
appreciate any information from users of a similar system. Thanks to Mike wd6eh
odem and thanks to Clint ka7oei for the mods. And thanks to whoever answers thi
Ken   kd6oat@kd6oat.ampr.org 44.40.1.40
kd6oat@uugate.aim.utah.edu

Ken,
About a year and a half ago I purchased a TAPR 9600 modem and installed it in
my PK232MBX. It was a very rewarding project. The 9600 modem kit isn't a
beginner's kit, but I managed to complete it and get it to work. I don't know
exactly what you mean by "where and how the 9600 modem is located..." Mine is
internally mounted in the PK232, and I can't see why anyone would want to do
different. Did you get the install kit from TAPR? If so, an internal install is
really easy. Also, I added a simple curcuit that makes the front panel DCD LED
work on the PK232 while the 9600 modem is active, so that kind of ends any need
for any other possible modem configuration. The deviation setting is set one
time, then not adjusted again. And the KS960 will make a fine "first" 9600
transciever.

Be happy to start a dialog on the subject.

Regards,
Steve Diggs, KB4ZTN
steve.diggs@totrbbs.radio.org

Top Of The Rock BBS - Lilburn, GA   SYSOP: Steve Diggs
Phone: +1 404 921 8687   Snailmail: 4181 Wash Lee Ct.
Lilburn, GA 30247-7440

22. extended KISS

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 12 Apr 95 11:53:51 EDT
To: netsig@tapr.org (netsig TAPR)
Message-ID: <15021573.1a4e@ram.net>
Rendered body type: text/plain

Has anyone done any work on adding extensions to KISS that include Data
frames with CRC's?
Tom

23. Re: [NETSIG:1149] extended KISS

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Wed, 12 Apr 95 10:37:16 PDT
To: netsig@tapr.org
Message-ID: <9504121037.ZM14934@hanko>
Rendered body type: text/plain

```
On Apr 12, 12:05pm, Tom Moulton wrote:
> Subject: [NETSIG:1149] extended KISS
> Has anyone done any work on adding extensions to KISS that include Data
> frames with CRC's?
> Tom
>-- End of excerpt from Tom Moulton


Yes.

See the documentation that comes with the G8BPQ switch.

There are several extensions including multiple devices
per serial port, CRC, and a polled mode ("don't call me
I'll call you").

   ...  Hank



--

Hank Oredson @ Mentor Graphics            Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

24. Re: [NETSIG:1150] Re: extended KISS

From: jwt@shrine.cyber.ad.jp (Jim Tittsler)
Date: Thu, 13 Apr 1995 08:54:53 +0900
To: netsig@tapr.org
Message-ID: <DX6ZlKhq1C-D078yn@shrine.cyber.ad.jp>
Rendered body type: text/plain

```
In article <9504121037.ZM14934@hanko>, Hank Oredson wrote:
> On Apr 12, 12:05pm, Tom Moulton wrote:
> > Has anyone done any work on adding extensions to KISS that include Data
> > frames with CRC's?
>
> See the documentation that comes with the G8BPQ switch.
>
> There are several extensions including multiple devices
> per serial port, CRC, and a polled mode ("don't call me

I believe the G8BPQ extension adds a simple 8 bit checksum to
each KISS frame.
```

25. 9600Bd ++++

From: paul@paccomm.com
Date: Thu, 13 Apr 95 09:12:43 UTC
To: netsig@tapr.org
Message-ID: <2662@paccomm.com>
Rendered body type: text/plain

```
Hi. You'll shortly see the QST review of a number of so-called
9600 ready radios and the sorry story it tells.
I've just tested a pair of Azden DCS9600s and they are FANTASTIC!
We had them running at TXD of 3 at 9600. Tomorrow I'll try to
run them at 19200 (unmodified). They are reputed to do it.......
Watch this space!
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Paul Evans, W4/G4BKI   paul@paccomm.com
+1 (813) 874-2980  Fax:+1 (813) 872-8696  BBS: +1 (813) 874-3078 (V.34)
The views expressed in this message are not necessarily those of PacComm.
I don't surf the internet, I SAIL IT!
     Captain of S/V "Spindrift" (Catalina 36), Dunedin, FL.
PacComm Packet Radio Systems, Inc., 4413 N. Hesperides St., Tampa, FL 33614-7618
```

26. Re: [NETSIG:1152] 9600Bd ++++

From: zephd@iquest.net (David Zeph)
Date: Thu, 13 Apr 95 09:20 EST
To: netsig@tapr.org
Message-ID: <m0rzPke-000E3RC@dorite.iquest.net>
Rendered body type: text/plain

```
Yeah ... but the Azden's cost $650.  You can buy two Kantronics D4-10's for
the same money.  While I have an intense dislike for the disdain with which
Kantronics' normally treats its customers, and I applaud the Azden design,
they are simply priced about $200-300 too high.  An oven can be added to the
```

```
Kantronics D4-10's for improved temperature stability, so the only advantage
of the Azden's is the 35W output power.

73 ---> Dave, W9ZRX    (zephd@iquest.net)


>Hi. You'll shortly see the QST review of a number of so-called
>9600 ready radios and the sorry story it tells.
>I've just tested a pair of Azden DCS9600s and they are FANTASTIC!
>We had them running at TXD of 3 at 9600. Tomorrow I'll try to
>run them at 19200 (unmodified). They are reputed to do it.......
>Watch this space!
>_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
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>     Captain of S/V "Spindrift" (Catalina 36), Dunedin, FL.
>PacComm Packet Radio Systems, Inc., 4413 N. Hesperides St., Tampa, FL
33614-7618
>
>
```

27. 10 MHz TNC Upgrade

```
From: <Dave@kwa.mhs.compuserve.com>
Date: 13 Apr 95 10:50:19 EDT
To: <netsig@tapr.org>
Message-ID: <950413145018_555063.0_EHF80-2@CompuServe.COM>
Rendered body type: text/plain
```

```
Hi netsig,

     Can someone point me to a source of parts for the 10 MHz
upgrade to a TNC-2?

     Thanks.

          Dave WA1JHK

-----
Dave Maciorowski, WA1JHK
Colorado Repeater Association, Inc.
  Serving the Colorado Front Range
    447.200 9600 Baud Digital Repeater

Internet:   dave@kwa.mhs.compuserve.com
CompuServe: MHS:Dave@KWA
```

28. Re: [NETSIG:1154] 10 MHz TNC Upgrade

```
From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 13 Apr 95 10:44:23 EDT
To: netsig@tapr.org
Message-ID: <15021573.1a54@ram.net>
Rendered body type: text/plain
```

```
PacComm has an upgrade kit.

(813) 874-2980 Tech Support
(800) 486-7388 Orders

>From: <Dave@kwa.mhs.compuserve.com>
>Subject: [NETSIG:1154] 10 MHz TNC Upgrade
>Date: Thu, 13 Apr 1995 10:41:27 -0500
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>
>Hi netsig,
>
>     Can someone point me to a source of parts for the 10 MHz
>upgrade to a TNC-2?
>
>     Thanks.
>
>          Dave WA1JHK
>
>-----
>Dave Maciorowski, WA1JHK
>Colorado Repeater Association, Inc.
```

> Serving the Colorado Front Range
>   447.200 9600 Baud Digital Repeater
>
>Internet: dave@kwa.mhs.compuserve.com
>CompuServe: MHS:Dave@KWA
>

29. Re: [NETSIG:1152] 9600Bd ++++

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Thu, 13 Apr 95 09:44:24 PDT
To: netsig@tapr.org
Message-ID: <9504130944.ZM1496@hanko>
Rendered body type: text/plain

On Apr 13, 8:37am, paul@paccomm.com wrote:
> Subject: [NETSIG:1152] 9600Bd ++++
> Hi. You'll shortly see the QST review of a number of so-called
> 9600 ready radios and the sorry story it tells.
> I've just tested a pair of Azden DCS9600s and they are FANTASTIC!
> We had them running at TXD of 3 at 9600. Tomorrow I'll try to
> run them at 19200 (unmodified). They are reputed to do it.......
> Watch this space!

What tnc(s) are you using with them?

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

30. Re: [NETSIG:1154] 10 MHz TNC Upgrade

From: zephd@iquest.net (David Zeph)
Date: Thu, 13 Apr 95 14:16 EST
To: netsig@tapr.org
Message-ID: <m0rzUNb-000E5vC@dorite.iquest.net>
Rendered body type: text/plain

PacComm is a source of the compoents to perform the 10Mhz upgrade.

73 ---> Dave, W9ZRX   (zephd@iquest.net)

>Hi netsig,
>
>   Can someone point me to a source of parts for the 10 MHz
>upgrade to a TNC-2?
>
>   Thanks.
>
>   Dave WA1JHK
>
>-----
>Dave Maciorowski, WA1JHK
>Colorado Repeater Association, Inc.
> Serving the Colorado Front Range
>   447.200 9600 Baud Digital Repeater
>
>Internet: dave@kwa.mhs.compuserve.com
>CompuServe: MHS:Dave@KWA
>
>
>

31. [NETSIG:1153] Re: 9600Bd ++++

From: WCHAST@delphi.com
Date: Thu, 13 Apr 1995 22:20:57 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HPB1A50Y5E96VRXR@delphi.com>
Rendered body type: text/plain

> Return-path: <netsig@tapr.org>
> Received: from dingus.n5lyt.datarace.com (204.96.214.85)

```
>  by delphi.com (PMDF V4.3-9 #7804) id <01HPACC5UNCW94DRYC@delphi.com>; Thu,
>  13 Apr 1995 10:25:35 -0500 (EST)
> Received: from dingus.n5lyt.datarace.com (localhost [127.0.0.1])
>  by dingus.n5lyt.datarace.com (8.6.10/8.6.9) with SMTP id JAA14339; Thu,
>  13 Apr 1995 09:24:58 -0500
> Date: Thu, 13 Apr 1995 09:24:58 -0500
> From: zephd@iquest.net (David Zeph)
> Subject: [NETSIG:1153] Re: 9600Bd ++++
> Sender: netsig@tapr.org
> To: netsig@tapr.org
> Reply-to: netsig@tapr.org
> Message-id: <m0rzPke-000E3RC@dorite.iquest.net>
> X-Mailer: <PC Eudora Version 1.4>
> Content-type: text/plain; charset="us-ascii"
> Content-transfer-encoding: 7BIT
> Originator: netsig@tapr.org
> Precedence: bulk
> X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
> X-Comment: Tucson Amateur Packet Radio  Networking SIG
>
> Yeah ... but the Azden's cost $650.  You can buy two Kantronics D4-10's for
> the same money.  While I have an intense dislike for the disdain with which
> Kantronics' normally treats its customers, and I applaud the Azden design,
> they are simply priced about $200-300 too high.  An oven can be added to the
> Kantronics D4-10's for improved temperature stability, so the only advantage
> of the Azden's is the 35W output power.
>
> 73 ---> Dave, W9ZRX    (zephd@iquest.net)
>
>
> >Hi. You'll shortly see the QST review of a number of so-called
> >9600 ready radios and the sorry story it tells.
> >I've just tested a pair of Azden DCS9600s and they are FANTASTIC!
> >We had them running at TXD of 3 at 9600. Tomorrow I'll try to
> >run them at 19200 (unmodified). They are reputed to do it.......
> >Watch this space!
> >_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
> >Paul Evans, W4/G4BKI   paul@paccomm.com
> >+1 (813) 874-2980  Fax:+1 (813) 872-8696  BBS: +1 (813) 874-3078 (V.34)
> >The views expressed in this message are not necessarily those of PacComm.
> >I don't surf the internet, I SAIL IT!
> >     Captain of S/V "Spindrift" (Catalina 36), Dunedin, FL.
> >PacComm Packet Radio Systems, Inc., 4413 N. Hesperides St., Tampa, FL
> 33614-7618
> >
> >
>
>
>
Yep, and for about the same cost I can buy a couple of Motorola M120's though
the do require a mod to the TX side of the radio (simple two component removal
and one wire jumper, takes about 20 minutes) You get 40-45 watts of output for
this price, and you don't have to contend with the above mentioned problem
with the manufacturer.


At least it looks like Azden is on the right track now if they will just drop
the price a bit it would make things much nicer.

Ohh, by the way the Radius radios are synthesized and they are much more
stable than the D4-10's ;-}


Chuck Hast
Internet -- wchast@delphi.com or kp4djt@ibm.net
Packet Radio E-mail --- kp4djt@kp4djt
AX.121 --- 3100813077
Running OS/2, and almost running LINUX! --- No DOS here!
```

32. [NETSIG:1154] 10 MHz TNC Upgrade

```
From: WCHAST@delphi.com
Date: Thu, 13 Apr 1995 22:21:06 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HPB1B8YVJS96VRXR@delphi.com>
Rendered body type: text/plain
```

```
Yea, PacComm Packet Radio Systems will sell you the whole kit, call them at
813.874.2980
```

Chuck Hast
Internet -- wchast@delphi.com or kp4djt@ibm.net
Packet Radio E-mail --- kp4djt@kp4djt
AX.121 --- 3100813077
Running OS/2, and almost running LINUX! --- No DOS here!

33. Re: [NETSIG:1158] Re: 9600Bd ++++

From: janderson@ram.net (Jack Anderson)
Date: Thu, 13 Apr 95 22:30:05 GMT
To: netsig@tapr.org
Message-ID: <15021591.0acb@ram.net>
Rendered body type: text/plain

>Yep, and for about the same cost I can buy a couple of Motorola M120's thoug

M120 - which one is this? Radius mobile?

34. Re: [NETSIG:1156] Re: 9600Bd ++++

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 13 Apr 95 15:31:31 UTC
To: netsig@tapr.org
Message-ID: <2688@paccomm.com>
Rendered body type: text/plain

Hank,
Not trying to make an advert out of this....
Paul is using PacComm SPIRIT-2 TNCs. Jumperable (and pluggable) for any
speed from 4.8 to 56. it all depends on what the radio can handle.
(any speed = 4.8, 9.6, 19.2, 38.4, 57.6)
_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

35. Re: [NETSIG:1157] Re: 10 MHz TNC Upgrade

From: n7xbm@uugate.wa7slg.ampr.org
Date: Thu, 13 Apr 95 22:41:37 mst
To: netsig@tapr.org
Message-ID: <61588@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

hi dave, best source right now is paccomm, in tampa fla. they make a kit
for their tiny-2 tnc's which also workds with the mfj serise/ series.
i have tried to find a source other than them (thinking about reduced cost)
but was unable to unless i wanted to order 100 plus quantity.
the kits come with instructions, but u must be carefull as the instructions
were written a while ago and mfj has upgraded som parts since then.
the kits for the tiny-2 series are plug and play, but tell them what t-2
you have (version on pc board). price isn't too bad. they have an 800
number if u get information.
73 de h/ shawn, n7xbm. shawnpat@sierra.net

36. Re: [NETSIG:1154] 10 MHz TNC Upgrade

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Fri, 14 Apr 1995 09:47:41 -0400
To: netsig@tapr.org
Message-ID: <199504141347.JAA24375@nadc.nadc.navy.mil>
Rendered body type: text/plain

PacCom has the kit for $20 or so. I bought it a year ago.

Doug

37. PACK*BASH Friday evening at Hamvention

From: jra@ag9v.ampr.org
Date: Fri, 14 Apr 1995 11:09:19 -0400 (EDT)
To: netsig@tapr.org, bbssig@tapr.org, tapr-bb@tapr.org,
        nos-bbs@hydra.carleton.ca
Message-ID: <199504141509.LAA02371@ag9v.ampr.org>
Rendered body type: text/plain

Attending the 1995 Dayton Hamvention? Time's running out, so register now
for PACK*BASH!

What?
        A new event for the digitally-inclined ham, featuring:

```
        *  Buffet dinner (with cash bar)
        *  Nationally-known speaker holding forth on a current topic
        *  Prize raffle
        *  TAPR special interest group meetings
        *  "Birds of a Feather" gatherings

When?
        Friday evening, April 28, 1995
        Dinner starts at 7:00 pm
        Speaker at 7:45
        Meetings to begin after the speaker


Where?
        TJ's Restaurant
        2462 Dryden Road, Dayton
        (Dryden Road exit, I75 -- across from the Holiday Inn)

How?
        Dinner requires advance registration and payment BY APRIL 24th, 1995.
        Seating for dinner only is limited, so register early!  The cost is
        $16.00 per person, tax and tip included.

        All amateurs are welcomed to attend, enjoy the speaker, and
        particpate in the meetings, although only those purcashing a dinner
        can eat.

        To register, contact:
        PACK*BASH
        c/o TAPR
        8987-309 E. Tanque Verde Road #337
        Tucson, AZ   85749-9399

        Phone: (817) 383-0000
        Fax: (817) 566-2544
        Internet: TAPR@TAPR.ORG

        Visa/Mastercard Accepted

Who?
        PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet Radio,
        the national leader in digital communication -- and the Miami
        Valley FM Association, Dayton's packet radio club.

For further information, contact TAPR, or email packbash@ag9v.ampr.org or
BASH@N8ACV.#DAY.OH.USA.NOAM
--
John Ackermann   AG9V
Internet:  jra@ag9v.ampr.org
Packet:    AG9V@N8ACV.#DAY.OH.USA
```

38. [NETSIG:1160] Re: 9600Bd ++++

```
From: WCHAST@delphi.com
Date: Fri, 14 Apr 1995 20:05:33 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HPCAVBAFHU8ZEHKW@delphi.com>
Rendered body type: text/plain

> Return-path: <netsig@tapr.org>
> Received: from dingus.n5lyt.datarace.com by delphi.com (PMDF V4.3-9 #7804)
>  id <01HPB4K8WRM88Y5AVA@delphi.com>; Thu, 13 Apr 1995 23:53:52 -0500 (EST)

> >Yep, and for about the same cost I can buy a couple of Motorola M120's thoug
>
> M120 - which one is this?  Radius mobile?

Yes that is the 2 channel Motorola Radius. the 8 and 16ch are about $100 more
expensive, and for what we use them for, (networking) a radio that sets on the
same freq in a remote site does not really need more channels. In fact you can
get a even lower price on the M100 which is a 1 channel Radius.

Chuck Hast
Internet -- wchast@delphi.com or kp4djt@ibm.net
Packet Radio E-mail --- kp4djt@kp4djt
AX.121 --- 3100813077
Running OS/2, and almost running LINUX! --- No DOS here!
```

39. Re: [NETSIG:1165] Re: 9600Bd ++++

From: janderson@ram.net (Jack Anderson)
Date: Fri, 14 Apr 95 21:05:47 GMT
To: netsig@tapr.org
Message-ID: <15021591.0ae5@ram.net>
Rendered body type: text/plain

>Yes that is the 2 channel Motorola Radius. the 8 and 16ch are about $100 mor
>expensive, and for what we use them for, (networking) a radio that sets on t
>same freq in a remote site does not really need more channels. In fact you c
>get a even lower price on the M100 which is a 1 channel Radius.

I was working with a Motorola tech last week who also happens to be a ham.
He had some very good things to say about the Maxtrac mobiles, and the Radius
looks almost identical on the outside. I can't remember all of his comments
but overall he indicated that the radio has a lot of built in capabilities
that can be activated with the service software. He uses them for ham stuff
too. Do they work on the ham bands "out of the box"? How's the commercial
band overload rejection? Hopefully they have a tracking filter to take the
place of a helical preselector, if they are wideband synthesized. Will they
work on 9600? I have seen Maxtracs used as MDC-4800 data network radios in
public safety applications. I might be interested in them for networking
applications too.

Jack

40. X1J4

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 14 Apr 1995 19:56:21 -0700
To: netsig@tapr.org
Message-ID: <199504150312.WAA24771@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Recently upgraded one of my nodes to X1J4. Thusfar it has worked quite
reliably on a moderatly busy network. I really LIKE the new L3 heard list
which shows end-to-end L3 connects through the node. This gives a nodeOp a
more complete indication of system usage and routing, which is helpful.
Dave has given this function a similar format as in the MH listing and it
shows not only current connected links but also previous ones over a period
of time.

For tcpip, the autoarp function works well. This is an area I'm fuzzy
about. The autoarp has a timer set in minutes, and which maxes out to
around a day.
I've set my timer for max but I'm not sure whether the time limit is
significant or not. Anyone in netland care to comment on recommendations in
this area?

All-in-all, I think the X1J4 is worth upgrading to if you are running older
versions.

73 de Jack

41. Re: [NETSIG:1167] X1J4

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sat, 15 Apr 1995 07:58:13 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950415075223.11960A-100000@acca>
Rendered body type: text/plain

On Fri, 14 Apr 1995, Jack Taylor wrote:

> Recently upgraded one of my nodes to X1J4. Thusfar it has worked quite
> reliably on a moderatly busy network. I really LIKE the new L3 heard list
> which shows end-to-end L3 connects through the node. This gives a nodeOp a
> more complete indication of system usage and routing, which is helpful.
> Dave has given this function a similar format as in the MH listing and it
> shows not only current connected links but also previous ones over a period
> of time.
>
> For tcpip, the autoarp function works well. This is an area I'm fuzzy
> about. The autoarp has a timer set in minutes, and which maxes out to
> around a day.
> I've set my timer for max but I'm not sure whether the time limit is
> significant or not. Anyone in netland care to comment on recommendations in
> this area?

        Jack I was unaware that Dave had added automatic Arp Add. That is
good news! As for the timer just set it for max and forget it. Should you

get a rash of here now gone later tcpip stations you might want to keep a new entry less time.

Around here if I see a new automatic entry I will perm it always! We don't have that many here...

> All-in-all, I think the X1J4 is worth upgrading to if you are running older
> versions.
>
> 73 de Jack
>
>
>
>

I will upgrade asap but since it involves an all day trip up mountains it will have to wait....

73, karl k5di

42. [NETSIG:1166] Re: 9600Bd ++++

From: WCHAST@delphi.com
Date: Sat, 15 Apr 1995 23:55:34 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HPDX6C98E090NVF9@delphi.com>
Rendered body type: text/plain

>>
> I was working with a Motorola tech last week who also happens to be a ham.

Hmm get as much info as you can from him!!! These radios make GOOD data radios.

> He had some very good things to say about the Maxtrac mobiles, and the Radius
> looks almost identical on the outside.
Yes, and on the inside too. I have used both lines of radios for data, and both of them work quite well. The Maxtrac switches faster (it works with Motorola trunking systems and so it has to be fast in order to avoid long lock up times)

> but overall he indicated that the radio has a lot of built in capabilities
> that can be activated with the service software.
Yes, if you will look at the schematics of the main board where the audio is processed, you will see that the aux connector "flat RX audio" line goes to a jumper block that lets you select de-emphasized or flat audio. That takes care of the RX side of things. The TX needs to have a cap and resistor removed and a wire jumper to jumper around a splatter filter, that takes care of the TX side of things.

> He uses them for ham stuff
> too. Do they work on the ham bands "out of the box"? How's the commercial
> band overload rejection? Hopefully they have a tracking filter to take the
> place of a helical preselector, if they are wideband synthesized. Will they
> work on 9600? I have seen Maxtracs used as MDC-4800 data network radios in
> public safety applications. I might be interested in them for networking
> applications too.

Yes, they do, the 150mhz unit goes down to 146mhz but you can use a trick in the software programming to move it down to 145mhz.

The 70cm units go from 403-435 (sub-band1) 438-470 (sub-band2) and 470-512 (sub- band3) out of the box.

Here at Tampa LAN we have a trunk on the ROSE network that links us to the next switch site north of us. the distance is about 35 miles. This path runs day and night with loads of traffic. If it was 1200B it would be a looser for real, but at 9k6 it really runs fast. We fooled around with old radios, old commercial radios until we got fed up with the whole mess and between the two lans we bought two radios and installed them. They have been there now I guess 8 months blasting away day and night. That is the most trouble free link around here!

Yes since the hardware was designed to run on the MDC-4800 and also the 9k6 systems, it really does not take much work to get the signal path out of the radio for 9k6...

Chuck Hast
Internet -- wchast@delphi.com or kp4djt@ibm.net
Packet Radio E-mail --- kp4djt@kp4djt
AX.121 --- 3100813077
Running OS/2, and almost running LINUX! --- No DOS here!

43. Motorola (was: 9600Bd ++++)

From: Tim Baggett <tim@NMSU.Edu>
Date: Sat, 15 Apr 1995 22:33:32 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.87.9504152232.B29831-0100000@wilma>
Rendered body type: text/plain

On a similar topic -

I'll ask again, Does anyone have information on getting the Motorola
Syntor T74SRA3D00AK (UHF 450+ band I believe) into the ham band? I know
ther is a way to do it, but a local commerical radio guy doesn't know the
correct keystroke sequences on the programmer. I have the data book as
well. I also hear they work great for data.

I'd like to do something with this radio. It is 100 Watts. After finding new
hobbies, I'm beginning to see all my radio equipment in terms of being
worth XX 'hours student flying time'....Either that, or the number of
skydiving jumps....If anyone knows the correct info for this rig, a good
deal could prolly be found (and if you're within flying range I might
even try to deliver hihi)

Tim, AA5DF (aeronautical mobile ;-)

New Mexico State University, Las Cruces, NM
Internet: tim@nmsu.edu
AMPRnet: aa5df@armstrong.ampr.org

44. Re: [NETSIG:1170] Motorola (was: 9600Bd ++++)

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sun, 16 Apr 1995 13:17:54 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950416131045.7799A-100000@acca>
Rendered body type: text/plain

On Sun, 16 Apr 1995, Tim Baggett wrote:

>
> On a similar topic -
>
> I'll ask again, Does anyone have information on getting the Motorola
> Syntor T74SRA3D00AK (UHF 450+ band I believe) into the ham band? I know
> ther is a way to do it, but a local commerical radio guy doesn't know the
> correct keystroke sequences on the programmer. I have the data book as
> well. I also hear they work great for data.

Tim Bob wa5ind gave me one of the radios too in hopes that I can
find a way to get them into the ham band at 420-450 MHz. I have a lead on
the guy who tunes up this kind of radio at SigFldMaint at White Sands
Missile Range. I will talk with him at lunch Tuesday and see if he will
take on the "special things" that will move the turkey to the ham bands.

I will ask him to just burn the e-prom, and leave it to us to get
the things tuned up.

>
> I'd like to do something with this radio. It is 100 Watts. After finding new
> hobbies, I'm beginning to see all my radio equipment in terms of being
> worth XX 'hours student flying time'....Either that, or the number of
> skydiving jumps....If anyone knows the correct info for this rig, a good
> deal could prolly be found (and if you're within flying range I might
> even try to deliver hihi)

Tim jumps out of airplanes in perfect running order. Makes you wonder.

>
> Tim, AA5DF (aeronautical mobile ;-)
>
> New Mexico State University, Las Cruces, NM
> Internet: tim@nmsu.edu
> AMPRnet: aa5df@armstrong.ampr.org

>
>
>
>
73, karl k5di

45. Re: Motorola (was: 9600Bd ++++)

From: Tim Baggett <tim@NMSU.Edu>
Date: Sun, 16 Apr 1995 19:30:12 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.87.9504161912.B3264-0100000@wilma>
Rendered body type: text/plain

On Sun, 16 Apr 1995, Klarsen wrote:

<Stuff in reference to the UHF Motorola Syntor deleted>

> I will ask him to just burn the e-prom, and leave it to us to get
> the things tuned up.
>

I understand that the problem is getting the prom programmer to accept
the ham band frequency. Last I heard, my prom was in Dallas at a Motorola
shop and they weren't sure about the procedure. I'm wondering why the
timebase can't just be slowed down a bit (I think the timebase is set to
10MHz then multiplied up - not sure though).

> Tim jumps out of airplanes in perfect running order. Makes you wonder.

Yeah! living life to its fullest! I wish I can gain some capital out of
these commercial radios I got. I want to rent the plane and buzz to Tucson
to add a few flying hours to one log book and a few seconds freefall to
another log book.

I also have an RCA UHF MircoTek or MicroTac or something like that.

PS - Skydivers differ from Golfers in that Golfers get to replace their
own divots.....

Tim, AA5DF

New Mexico State University, Las Cruces, NM
Internet: tim@nmsu.edu
AMPRnet: aa5df@armstrong.ampr.org

46. TAPR modem @ 4800 baud??

From: <rhallman@NVRNO.ANG.AF.MIL> (TSG, RICHARD, MAA, 569)
Date: Mon, 17 Apr 95 11:18:12 PDT
To: netsig@tapr.org
Message-ID: <,og8+p4fYja@NVRNO.ANG.AF.MIL>
Rendered body type: text/plain

I'm looking for any info to modify the TAPR 9600 to 4800 baud??

Thanks! Rich KI3V/7 Reno

47. Motorola Radios

From: "Ronald D. Hackett" <rhackett@crl.com>
Date: Mon, 17 Apr 1995 16:10:21 -0700 (PDT)
To: tcp-group@ucsd.edu, netsig@tapr.org, nos-bbs@hydra.carleton.ca
Message-ID: <Pine.SUN.3.91.950417160706.25411A-100000@crl6.crl.com>
Rendered body type: text/plain

Has anyone ever heard of either a Motorola HT440 hand held radio or a
series 9000 vehicle mounted radio can be used for 9600 or 19.2k packet
radio? I have discovered ready access to these two types of radios, but
I need to act quickly. If the radios can be used for packet radio, where
can I find the mods? Thanks for the assistance.

73 de Ron
n8naa

```
*******************************************************************************
Ronald D. Hackett              Internet:      r.hackett@ieee.org
The Packet Rat BBS             Packet Radio:  N8NAA@N8NAA.#SAT.TX.USA.NOAM
San Antonio, Texas, USA        AMPRnet:       n8naa@n8naa.ampr.org
Data/Fax:  (210)494-2849       Fidonet:       1:387/340
*******************************************************************************
```

48. Internet to MSYS BBS mail gateway service

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Mon, 17 Apr 95 19:42:10 -0600
To: tcp-group@ucsd.edu, netsig@tapr.org, nos-bbs@hydra.carleton.ca
Message-ID: <9504180142.AA06679@n.kb7eec.ampr.org>
Rendered body type: text/plain

Here's what is undoubtedly a Frequently Asked Question:

Is there a way to send mail from the Internet to the network of MSYS BBS systems, and vice-versa?

In my particular area, Utah, I think a couple guys have intended to provide this service because they run MSYS BBS systems with TCP/IP support, but their systems are apparently not functional. kf7ck.ampr.org and wb7esh.ampr.org are those I heard about. Maybe I could use a mail gateway in another state if one exists, and although the route may be circuitous it might at least be possible.

Thanks for any info and pointers to info, and I think I will also post this query to a USENET group -- rec.radio.amateur.digital.misc, perhaps. I have browsed around a few web pages, asked around, and read some printed literature, without finding a working mail gateway so far.

Gary

49. 32k Ram source?

From: RDAI@delphi.com
Date: Tue, 18 Apr 1995 00:09:01 -0500 (EST)
To: netsig@tapr.org
Message-ID: <01HPGQ8VMIH48Y6H6Y@delphi.com>
Rendered body type: text/plain

I am needing to upgrade my 1270b to 32k ram for use as a router.
Can someone give me some substitute numbers for this ic, and
sources for this part?

Numbers I have are:

D43256C-15L
CXK58257P-10L (Sony)

KA8OKH <rdai@delphi.com>
-----

50. Re: [NETSIG:1176] 32k Ram source?

From: Bob Nielsen <nielsen@primenet.com>
Date: Mon, 17 Apr 1995 23:26:05 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.BSI.3.91.950417232334.27012A-100000@usr4.primenet.com>
Rendered body type: text/plain

On Mon, 17 Apr 1995 RDAI@delphi.com wrote:

> I am needing to upgrade my 1270b to 32k ram for use as a router.
> Can someone give me some substitute numbers for this ic, and
> sources for this part?
>
> Numbers I have are:
>
> D43256C-15L
> CXK58257P-10L (Sony)
>
> ---
> KA8OKH <rdai@delphi.com>
> -----

They are available from TAPR. I am currently on a trip and don't have the part number information handy.

Bob

51. RE: [NETSIG:1149] extended KISS

From: roberts@ses6a.bt.co.uk
Date: Tue, 18 Apr 1995 10:34:30 +0100
To: netsig@tapr.org

Message-ID: <199504180937.EAA13404@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Why not converge KISS and the crosslink protocol ?

Kiss has a command byte and no checksum
Crosslink has a checksum and no command byte

Also be an idea to look at SLIP derivatives at the same time.

Finally, BPQ has extensions in it for multidrop etc.

Also, they could be extended to carry other data e.g. from a unit such
as you propose or from a TNC equipped with an add-on ADC board

Dave

52. Re: [NETSIG:1174] Motorola Radios

From: Klarsen <k5di@acca.nmsu.edu>
Date: Tue, 18 Apr 1995 10:01:43 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950418095704.24692A-100000@acca>
Rendered body type: text/plain

On Mon, 17 Apr 1995, Ronald D. Hackett wrote:

> Has anyone ever heard of either a Motorola HT440 hand held radio or a
> series 9000 vehicle mounted radio can be used for 9600 or 19.2k packet
> radio? I have discovered ready access to these two types of radios, but
> I need to act quickly. If the radios can be used for packet radio, where
> can I find the mods? Thanks for the assistance.
>
> 73 de Ron
> n8naa

Hi Ron, I don't think I have specific mods for those radios but
am sure they will work at 9600 baud with simple changes. Suggest you get
a service manual with those radios so you can tune them to frequency,
find the receiver output direct from the disciminator and figure out
where to apply the transmit audio.

73, karl k5di

53. Re: [NETSIG:1178] RE: extended KISS

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 18 Apr 95 13:40:52 EDT
To: netsig@tapr.org
Message-ID: <15021573.1a69@ram.net>
Rendered body type: text/plain

>
>Why not converge KISS and the crosslink protocol ?
>
>Kiss has a command byte and no checksum
>Crosslink has a checksum and no command byte
>
>Also be an idea to look at SLIP derivatives at the same time.
>
>Finally, BPQ has extensions in it for multidrop etc.
>
>Also, they could be extended to carry other data e.g. from a unit such
>as you propose or from a TNC equipped with an add-on ADC board
>
>Dave
>
>
I fully agree with you.

I think that a framing like used in PPP would be the best place to start.

PPP is a very common async link layer framing that includes transparency,
CRC's and a facility for many link level streams, including using different
protocols.

I'd suggest that PPP be used and have PID's for each of the existing Async
formats.

The one area we might need to digress from standard PPP is the initialization
where link parms are negociated, as this only would work for Point to Point.

(What PPP was really designed for...)

Comments?

tom

54. Re: [NETSIG:1175] Internet to MSYS BBS mail gateway service

From: wx7y@egate.nc7f.ampr.org
Date: Tue, 18 Apr 95 15:39:24 mst
To: netsig@tapr.org
Message-ID: <1097@egate.nc7f.ampr.org>
Rendered body type: text/plain

Hi Gary, I have been trying to forward over the internet for a little wile
and I have had some problems I think are because of the compressed forward
I do beleive if both msys bbs's have there node turned on and have access
to the internet thru a gateway that it should work If you would like to test
this let me know and I can set up forwarding to you. the path to me here thru
the internet is as follows. my alias is eutbbs, wx7y is the call sign and tghe
the internet path is thru nc7f.egate.ampr.org.
let me know and we can see if it will work or not 73 Bret WX7Y

55. RE: [NETSIG:1180] RE: extended KISS

From: roberts@ses6a.bt.co.uk
Date: Wed, 19 Apr 1995 08:36:28 +0100
To: netsig@tapr.org
Message-ID: <199504190736.CAA04726@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Agreed.

In the same way KISS was developed from SLIP, this should be built
on PPP. PMP (Point to MultiPoint ?) KISS2 ?. KISS added a simple
command byte to SLIP, maybe we need a bit of thought about the
command extensions

Bit of a digression from Phil's original intentions of KISS as
an interim though.

Dave

56. TAPR @ Dayton '95

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 23 Apr 1995 21:39:38 -0500 (CDT)
To: bbssig@tapr.org (BBS SIG mailing), netsig@tapr.org (NETSIG mailing),
        hfsig@tapr.org (HF SIG mailing), aprssig@tapr.org
Message-ID: <199504240239.VAA14970@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

TAPR Activities at Dayton '95

Dayton is almost upon us and here is the list of TAPR activities and events
happening during Dayton. We hope to see lots of folks around and please
stop by the TAPR booth and say hi!

TAPR Booth

The booth is located at the same location as the last several years. We
should have most items and kits available and another big membership offer
will be available to new members! Come by and say hi to the TAPR gang and
if you want, help out behind the table. The more the merrier.

Regional Groups Note: If you are with a regional digital group, please stop
by and chat with Greg Jones, WD5IVD about how TAPR can do things with your
regional group. There will also be a place at the booth to place regional
materials, so if you have something to hand out, drop it off.

Friday - TAPR Digital Forum

1:00pm - 1:45pm   Introduction to Digital Communications
                      Greg Jones, WD5IVD
1:45pm - 2:00pm   TAPR Update
                      John Ackerman, AG9V
2:00pm - 2:30pm   Layer 1 and Radio Issues
                      Mel Whitten, K0PFX
2:30pm - 3:00pm   TAPR/AMSAT DSP-93 Project Update

```
                     Bill Reed, WD0ETZ
3:00pm - 3:30pm    TCP/IP Issues and Trends
                     Barry McLaren, VE3JF
3:30pm - 3:45pm    BBS Issues and Trends
                     Barry Buelow, WA0RJT
3:45pm - 4:00pm    HF Digital Communications Trends

4:00pm - 4:30pm    APRS
                     Bob Bruninga, WB4APR
4:30pm - 5:30pm    TAPR APRS SIG
                     Keith Sproul, WU2Z


PACK*BASH T95 - Friday Evening
------------------------------
A new event for the digitally-inclined ham, featuring:
  *  Buffet dinner (with cash bar)
  *  Nationally-known speakers holding forth on current topics:
       * Bob Bruninga, WB4APR (Author of APRS)
       * Dewayne Hendricks, WA8DZP
  *  Prize raffle
  *  Lots of Informal Discussion
  *  TAPR NET SIG and a second APRS SIG meeting

When?
  Friday evening, April 28, 1995
  Dinner starts at 7:00 PM, speaker at 7:45 PM
  Everyone is invited to attend, but dinner is only available to those
  with reservations.

Where?
  TJ's Restaurant, 2462 Dryden Road, Dayton
  (Dryden Road exit, I75 -- across from the Holiday Inn)
  (Maps available at the TAPR booth)

How?
  Dinner requires advance registration (by April 24th)
  Come by the TAPR booth at Dayton to check on additional space.
  Everyone is invited to come, but dinner is only available to those
  with reservations.
  Dinner cost is $16.00 per person, tax and tip included.

  To register, contact:
    TAPR (tapr@tapr.org)
    Phone: (817) 383-0000, Fax: (817) 566-2544

Who?
  PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet Radio,
  the national leader in digital communication -- and the Miami
  Valley FM Association, Dayton's packet radio club.

(This is a replacement of the McNasty's event)


Saturday - BBS SIG Meeting
--------------------------
The TAPR BBS SIG will meet Saturday night at 7:00pm

Where:  Radison Hotel - Premier Room
        The Radison is located near the intersection of I-75 and
        Needmore Rd.  This is not far from Hara Arena.

        New feature this year - CHAIRS !!!

This is a great opportunity to meet with fellow BBS Sysops and discuss
current events and plans for the future.  TAPR membership is not a
requirement, this event is open to the public.

For more information, stop by the TAPR booth at HARA.


-------------------------------------------------------------------------
Tucson Amateur Packet Radio (tapr@tapr.org)
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399 * 817-383-0000
```

57. Dayton WX Forecast (fwd)

From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Tue, 25 Apr 95 18:43:42 CDT

To: bbssig@tapr.org
Cc: netsig@tapr.org
Message-ID: <9504252343.AA154619@tcet.unt.edu>
Rendered body type: text/plain

Here is something I found that you Dayton attendees will find
enlightening. Looks like it will be chilly again this year!
cu this weekend and 73 de Dave WO5H

Forwarded message:
> From listmaint@AMSAT.Org Tue Apr 25 09:40:43 1995
> From: k.baker@genie.geis.com
> Message-Id: <199504251216.AA195422169@relay1.geis.com>
> Date: Tue, 25 Apr 95 11:58:00 UTC
> To: amsat-bb@amsat.org
> Subject: Dayton WX Forecast
> X-Genie-Id: 7213491
> X-Genie-From: K.BAKER
>
> Grettings!
>
>   For those making their way to the Hamvention, here's the latest
> long-range weather forecast for the first two days of the event:
>
>
>   Friday: Scattered showers with temperatures 45-55 F.
>
>   Saturday: Variably cloudy with temperatures 37-56 F.
>
>
> Looks like umbrella and jacket weather again this year. I'll send along the
> forecast for Sunday as soon as it is known.
>
>
> 73,
>
>
> Keith/KB1SF
>

58. More Dayton WX Forecast (fwd)

From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Wed, 26 Apr 95 19:49:56 CDT
To: bbssig@tapr.org
Cc: netsig@tapr.org
Message-ID: <9504270049.AA173918@tcet.unt.edu>
Rendered body type: text/plain

Forwarded message:
>From listmaint@AMSAT.Org Wed Apr 26 10:38:29 1995
From: k.baker@genie.geis.com
Message-Id: <199504261123.AA063385396@relay1.geis.com>
Date: Wed, 26 Apr 95 11:02:00 UTC
To: amsat-bb@amsat.org
Subject: More Dayton WX Forecast
X-Genie-Id: 9743626
X-Genie-From: K.BAKER

Greetings!

     As promised, here's the latest updated weather forcast for the Dayton
Hamvention:

     Friday: Showers. Temperatures 37-55 Degrees F

     Saturday: Partly Cloudy. Temperatures 36-56 Degrees F

     Sunday: Variably Cloudy. Temperatures 44-61 Degrees F

Still looking like "bring your umbrella and/or jacket weather".

     I'm looking forward to seeing all of you at the Hamvention AMSAT booth.
Don't forget to sign up at the booth Friday for the Friday evening
AMSATdinner at the Stockyards Inn!

73,

Keith/KB1SF

59. HF auto digital approved

From: bruce@pixar.com (Bruce Perens)
Date: Wed, 26 Apr 95 22:18 PDT
To: netsig@tapr.org
Message-ID: <m0s4Ly0-00062fC@mongo.pixar.com>
Rendered body type: text/plain

This from W1AW:
ARLB045 HF auto digital approved

The FCC will amend its rules to permit limited automatic control of
digital stations on the amateur HF bands.

The action, in PR Docket 94-59, was announced in a press release.
The automatically controlled station must either be connected to
another station under manual control, or must transmit within a
subband designated for this purpose.

Those subbands have not yet been announced.

The Commission said it believes these rule changes will allow
amateurs to ''contribute to communication technology'' and to advance
amateurs' communication and technical skills.

More information was in August 1994 QST, on page 71.
--

Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.rahul.net/perens/LinuxForHams

60. BOF's at TAPR NETSIG?

From: kingj@gdls.com (Jeff King)
Date: Thu, 27 Apr 95 11:51:51 EDT
To: netsig@tapr.org
Cc: jjn@merit.edu
Message-ID: <9504271551.AA24640@vcae05.gdls.com>
Rendered body type: text/plain

Are there going to be any Bird's Of a Feather sessions at netsig this
year? Or does a agenda exist for the NETSIG meeting?

Anyone going to netsig on friday night want to discuss any (or all)
of the following?

* Part 15 (and amateur) spread spectrum
* Alternate access methods (asymetrical dual frequency, etc.)
* Amateur high speed RF modems (>50Kbaud)

Drop me email or look me up at NETSIG (WB8WKA) on friday night.

Regards,

-Jeff King WB8WKA   kingj@gdls.com

61. FINAL Dayton WX Forecast (fwd)

From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Thu, 27 Apr 95 18:08:52 CDT
To: netsig@tapr.org
Message-ID: <9504272308.AA190924@tcet.unt.edu>
Rendered body type: text/plain

Forwarded message:
>From listmaint@AMSAT.Org Thu Apr 27 07:11:43 1995
From: k.baker@genie.geis.com
Message-Id: <199504270916.AA137974211@relay1.geis.com>
Date: Thu, 27 Apr 95 09:04:00 UTC
To: amsat-bb@amsat.org
Subject: FINAL Dayton WX Forecast
X-Genie-Id: 4560605
X-Genie-From: K.BAKER

Greetings again, all!

        It's now looking like the "umbrella and jacket" forecast I've been
giving you for the 1995 Dayton Hamvention is still correct, except the day
forecast for rain has now changed from Friday to Sunday.

Friday: Mostly sunny. Temperatures 38-60 Degrees F.

Saturday: Variably cloudy. Temperatures 36-64 Degrees F.

Sunday: Rain. Temperatures 45-55 Degrees F.

For those of you not attending Dayton, I apologize for the bandwidth on this. However, several of our AMSAT people have found these reports quite useful in past years, particularly those who are driving to Dayton. Those people must often quickly decide on the "best" one or two day(s) to attend the event.

Remember, beginning in 1996, the Dayton Hamvention dates will shift into May. The 1996 dates are May 17,18 and 19. We also understand the local Weather Service has been advised of this change so as to also shift Dayton's famed "monsoon season" from late April to mid-May!

73,

Keith/KB1SF

62. radios for speeds above 19200bps

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Fri, 28 Apr 95 22:47:33 -0600
To: netsig@tapr.org
Message-ID: <9504290447.AA06812@n.kb7eec.ampr.org>
Rendered body type: text/plain

Hello everyone, since there has been talk about Azden, Kantronics and Motorola radios here, maybe some of you can answer this natural query:

What radios (or radio designs or kits) might I use for speeds above 19200bps, specifically for use with the PacComm SPIRIT-2 (formerly SPRINT-2) NODE TNC, set for 38400bps? I understand that a radio allowing 60KHz bandwidth is required. (The SPIRIT-2 NODE is switchable between radio speeds of 9600bps and 38400bps.)

I am quite interested in this, for no specific frequency band, although here are some band possibilities in order of my interest:

1. The 1.25cm band (the new 219-220MHz range, and 222-225MHz).

2. The 33cm, 23cm, and 13cm bands.

4. The 70cm band.

3. Microwave bands (e.g. 3GHz, 5GHz, 10GHz and 24GHz) for use with very directional (e.g. dish) antennas, for point-to-point, possibly full duplex use. Granted that even more than 60KHz bandwidth is typically used here, but even a mere 38400bps 60KHz over a microwave link would be of interest to me, so if anyone knows if this can work with, for example, gunnplexers like the AR^2 10GHz and 24GHz radios, please do say so.

Thanks for any pointers to products, kits or whatever! I am aware of some systems that involve transverters, like GRAPES modems and transverters for 220MHz that are being prepared by a group I'm working with here in Utah, but for this query I am thinking more along the lines of G3RUH modems like in the SPIRIT-2, set for 38400bps, so complete "wideband" radio systems are of interest. Even rumors about future products are even welcome.

73,
Gary

63. Re: [NETSIG:1189] radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sat, 29 Apr 1995 07:10:15 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950429065322.14064C-100000@acca>
Rendered body type: text/plain

On Fri, 28 Apr 1995, Gary Crum wrote:

> Hello everyone, since there has been talk about Azden, Kantronics and
> Motorola radios here, maybe some of you can answer this natural query:

>
> What radios (or radio designs or kits) might I use for speeds above 19200bps,
> specifically for use with the PacComm SPIRIT-2 (formerly SPRINT-2) NODE TNC,
> set for 38400bps? I understand that a radio allowing 60KHz bandwidth is
> required. (The SPIRIT-2 NODE is switchable between radio speeds of 9600bps
> and 38400bps.)
>
> I am quite interested in this, for no specific frequency band, although here
> are some band possibilities in order of my interest:
>
> 1. The 1.25cm band (the new 219-220MHz range, and 222-225MHz).
>
> 2. The 33cm, 23cm, and 13cm bands.
>
> for this query I am thinking more along the lines of G3RUH modems like in the
> SPIRIT-2, set for 38400bps, so complete "wideband" radio systems are of
> interest. Even rumors about future products are even welcome.
>
> 73,
> Gary
>

        I would like to buy TEKK radios and modify them for your desired
60 KHz bandwidth and make a profit so I can get some more gear. But I
have heard of no ham ever running 38kb/sec packet with the g3ruh modem.
So I am not comfortable with ANY radio and a g3ruh modem.

        The MITEX Motorola radios are available in El Paso, TX for
$100.00 each and they can be moved in frequency to 70 cm and are used a
lot for packet at 9600 baud. This radio can be changed to have a 60 khz
receiver bandpass and "should" work.

        Or you can wait a year and buy a whole data radio using SSB and
trellis to pass data of 250 kb/s in the 219 MHz band. This one will work
because I am building it....

        I know your 9600 baud is getting into Farmington, NM and hope
whatever you work out Gary can be duplicated there.

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
 *   *
 * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
 *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
 *   *
 *   Electrical Engineer with the Army Research Laboratory   *
 *   *
 ****

64. Is Packet Dead?

From: hprice@bektek.com (Harold Price)
Date: Sat, 29 Apr 1995 18:41:31 -0500
To: netsig@tapr.org, tcp-group@ucsd.edu
Message-ID: <199504292245.SAA28637@ivory.lm.com>
Rendered body type: text/plain

Or is it alive and well at Dayton? I couldn't go this year, but would like
to pass on anything on the digital event horizon. If anyone who went to
Dayton would like to borrow some column inches in QEX as hard data or a
soapbox, please send me your comments.

Thanks,
Harold Price

65. [NETSIG:1189] radios for speeds above 19200bps

From: WCHAST@delphi.com
Date: Sun, 30 Apr 1995 08:30:57 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HPXZ9V6CC28ZK9YW@delphi.com>
Rendered body type: text/plain

Gary;
I use the G3RUH modems quite a lot, and with varied types of radios. I have
done some
work with the units at speeds of up to 138kb (TNC fell over at that speed),
the biggest
problem as you point out is the RF.

Here is a way you could start experimenting with the higher speeds. Get your hands on
some of the FM wireless modules that are sold by various mail order houses for multiple
reasons, they are cheap and will let you get aquainted with the higher speed data over
a RF path. These things are FM so they will not have any problems with the modulation.

38.4kb should modulate on most any of these devices, it's high freq component goes up to
21.6kzh (using the proper filters on the G3RUH modem) and it's low freq component will be
down at 69hz which too is much easier to reproduce than the 23 hz value for 9k6.

In fact this idea could be used with some mixer modules to move the data signal up to
the 220mhz band and run some 38k4 paths with even those low cost modules.

Another low cost path is to use gunplexers and the circuits found in the latest ARRL handbook, which describes a 2mb data link using 10ghz gunplexers.

You could also build several of the gunnplexer based voice links that are found in the
amateur microwave publications, these would pass the 38,4 or 56k data with no problem
whatsoever.

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org   X.121 3100813077

* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *

66. Re: radios for speeds above 19200bps

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Sun, 30 Apr 95 10:18:02 -0600
To: netsig@tapr.org
Message-ID: <9504301618.AA00559@n.kb7eec.ampr.org>
Rendered body type: text/plain

Klarsen <k5di@acca.nmsu.edu> wrote:
>   I would like to buy TEKK radios and modify them for your desired

>60 KHz bandwidth and make a profit so I can get some more gear. But I

>have heard of no ham ever running 38kb/sec packet with the g3ruh modem.

>So I am not comfortable with ANY radio and a g3ruh modem.

Cool. I think TEKK radios cost about $170 now. I think the modification to support 60KHz signals (if possible) would be worth at least another $80, for $250 total cost for such a radio. Probably not twice the price ($340). Just so you have some idea of what someone like me might pay for it. Thanks for metioning it, good luck, and please let me know if I can be a beta tester. Apparently, you do not trust PacComm's claim that the SPIRIT-2 NODE (with G3RUH modem) can be used at the 38400bps radio speed simply by changing a jumper and thus selecting appropriate filter components they supply.

>   Or you can wait a year and buy a whole data radio using SSB and

>trellis to pass data of 250 kb/s in the 219 MHz band. This one will work

>because I am building it....

All right, go for it. This product would definitely help advance development of computer networking with amateur radio. I have already sent in notice to ARRL that I will be using 219MHz-220MHz here in Salt Lake County, Utah. I wonder if your data radio (and modem?) will require a card like the PI2 for interfacing to computers.

Also thanks to Chuck, WCHAST@delphi.com, for responding! I have thought of and heard of some of the ideas you suggested, Chuck, and that's nice to hear that you used G3RUH modems at 138Kbps, with a TNC (and not PI2 card) no less.

Could you please be more specific, and say for example, what software and hardware you used, and if you used full duplex or half duplex at high speeds?

I am looking for information from people who have done this sort of thing, and ideally some products or kits that can minimize efforts. There is interesting research and development going on in my area, and I am definitely interested in that, but I also like plugging things together and seeing them work, rather than stacking up a big list of non-trivial projects that never get done and take up storage space. There is the issue of focus and scope limiting, I guess.

Glen, N6GN, sure seems like a nice guy and has made interesting information available, and the 2Mbps 10GHz data link article is one that is definitely in my mind. I wonder if anyone has tried using SPIRIT-2s at 38400bps with it, to take care of the modem and computer interfacing part of the design that the N6GN article does not address (even though 38,400 is less than 2,000,000 :-). He also seems to have setup IP links over ~200Kbps 220MHz links, which is right in like with the new 219-200MHz allocation.

73,
Gary

67. Higher Speed radios and modemd

From: tmoulton@ram.net (Tom Moulton)
Date: Sun, 30 Apr 95 13:24:42 EDT
To: netsig@tapr.org (netsig TAPR)
Message-ID: <15021573.1a8e@ram.net>
Rendered body type: text/plain

I have heard conflicting estimates upon the occupied bandwidth of various modems using FM modulation.

Some say 56kb will fit in 100khz.

Another problem is that the wider filters are at 60khz and 120khz (or more) which is not wel suited for 100khz channels.

(60khz to narrow, extra distortion/ripple and 120khz wide extra signals past)

We need to look at what IF/RF parts exist to select speeds and channel spacing.

Has anyone given this a closer examination?

tom

68. Re: [NETSIG:1193] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sun, 30 Apr 1995 15:08:16 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950430145502.18865B-100000@acca>
Rendered body type: text/plain

On Sun, 30 Apr 1995, Gary Crum wrote:
> > Or you can wait a year and buy a whole data radio using SSB and
>
> >trellis to pass data of 250 kb/s in the 219 MHz band. This one will work
>
> >because I am building it....
>
>
> All right, go for it. This product would definitely help advance development
> of computer networking with amateur radio. I have already sent in notice to
> ARRL that I will be using 219MHz-220MHz here in Salt Lake County, Utah. I
> wonder if your data radio (and modem?) will require a card like the PI2 for
> interfacing to computers.

Gary my current thinking is that with the high data rate it will be better to make the data radio IF and digital part a computer card. With software you can then put the data directly on the computer bus and deal with it. If not done this way then a P12 or such card will be needed. The transverter from 10.7 MHz to 219 MHz will be external to the computer.

I think using this appoach we save the user the cost of the P12 card at a very small incremental cost to the Data Radio. JDR Micodevices has very nice breadboard cards and you buy the hardeware and software to interface with the computer. A question is whether to make the card for

an 8086 bus or a newer 16 bit bus. The 8086 8 bit bus should work on
almost any newer computer but rather slower. If anyone has a strong
opinion I'm eager to hear it.

73, de karl k5di

69. Re: [NETSIG:1195] Re: radios for speeds above 19200bps

From: Steve Schmidt <steve@gw-ais-windstar.windstar.net>
Date: Sun, 30 Apr 1995 18:42:51 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199504302342.SAA02373@gw-ais-windstar.windstar.net>
Rendered body type: text/plain

> > >   Or you can wait a year and buy a whole data radio using SSB and
> > >trellis to pass data of 250 kb/s in the 219 MHz band. This one will work
> > >because I am building it....
>
>   I think using this appoach we save the user the cost of the P12
> card at a very small incremental cost to the Data Radio. JDR Micodevices
> has very nice breadboard cards and you buy the hardeware and software to
> interface with the computer. A question is whether to make the card for
> an 8086 bus or a newer 16 bit bus. The 8086 8 bit bus should work on
> almost any newer computer but rather slower. If anyone has a strong
> opinion I'm eager to hear it.

I like the idea of a radio on a card, and think that you shgould use a
16-bit interface. With the price of systems coming down, and the advantages
that the extra 8 bits of address and IRQ's (<-very VERY important on
resource-packed systems) it doesn't seem to make sense to "build for the
past."

Steve, N3QEM

70. Re: [NETSIG:1195] Re: radios for speeds above 19200bps

From: bruce@pixar.com (Bruce Perens)
Date: Sun, 30 Apr 95 19:17 PDT
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <m0s5l31-0005lcC@mongo.pixar.com>
Rendered body type: text/plain

I think having the IF live in the computer and the transverter live outside
is a good idea. Would it be possible for the transverter to live on the
other end of about 100 feet of cheap cable-tv feedline? I like to mount
my RF equipment at the antenna, it saves me from having to spend on really
good feedline or tolerate several dB of feedline loss. I've had a TEKK in a
NEMA box on the roof for months now, and it seems to work fine that way.

        Bruce
--

Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.rahul.net/perens/LinuxForHams

71. JNOS & AXIP/ENCAP Routing

From: sysop@phx-az.com (Daniel Meredith)
Date: Mon, 1 May 1995 03:18:00 GMT
To: netsig@tapr.org
Message-ID: <950430202708375@phx-az.com>
Rendered body type: text/plain

Hi All,
    I am looking for someone that has experience with the 1.10 versions
of JNOS and AXIP/ENCAP routing. I am in the process in putting the
system up on the air and could use some steering on the proper setup of
it. It's been a time since our gateway was alive and needless to say I
didn't save any of the old settings. Argh!

Thanks, please e-mail me directly rather than take up the group.

Dan

-----   \---------------/   -----
                       Arizona Network Intertie Group
                  "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP   Voice: +1-602-912-5671
P.O. Box 45378   Fax : +1-602-912-0426
Phoenix, Arizona   BBS : +1-602-912-0225
          85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator

---
 * OLXWin 1.00 * MSI - Connecting The World (tm)

72. Re: [NETSIG:1191] Is Packet Dead?

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 30 Apr 1995 23:21:05 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199505010421.XAA26977@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Seemed like a strong heart beat to me...but then Dr Death (aka Dave Toth)
should be consulted :-)

You missed a good one Harold -- the weather was nice!

More on tapr-bb as time premits for a full-writeup. Finals at school
call...and dissertation proposal to brgin writing.

Cheers - Greg, WD5IVD

According to Harold Price:
>
> Or is it alive and well at Dayton? I couldn't go this year, but would like
> to pass on anything on the digital event horizon. If anyone who went to
> Dayton would like to borrow some column inches in QEX as hard data or a
> soapbox, please send me your comments.
>
> Thanks,
> Harold Price
>
>

May 1995

Original source file: netsig.9505
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9505

1. Re: [NETSIG:1190] Re: radios for speeds above 19200bps

From: DAVE@sectel.com
Date: Mon, 1 May 1995 08:30:18 GMT0
To: netsig@tapr.org
Message-ID: <199505010743.CAA21629@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

> I would like to buy TEKK radios and modify them for your desired
> 60 KHz bandwidth and make a profit so I can get some more gear.
> But I have heard of no ham ever running 38kb/sec packet with the
> g3ruh modem. So I am not comfortable with ANY radio and a g3ruh
> modem.
>
I know of a link not far from here which used a couple of g3ruh
modems running at 64kb/sec, hitched up to a a pair of Pye L313 radios
which had been bent to 23cms. While it lasted it worked very well,
although I think it went off-air when the station at one end of the
link moved QTH.

A comment on another item in the thread: why the emphasis on 56kb/s?
Most of the world uses 64kb/s in telecomms, which would fit the
120kHz filters a bit better than 56kb/s would. Even the US 56kb/s
stuff is only that slow because the eighth bit is pinched for other
purposes - thus making the user rate 56 instead of 64kb/s.

Dave
--
djh@sectel.com
Tel +44 1285 655 766
Fax +44 1285 655 595

2. Re: [NETSIG:1191] Is Packet Dead?

From: dwolf@tcet.unt.edu (Dave Wolf)
Date: Mon, 1 May 95 7:35:03 CDT
To: netsig@tapr.org
Message-ID: <9505011235.AA155313@tcet.unt.edu>
Rendered body type: text/plain

>
> Or is it alive and well at Dayton? I couldn't go this year, but would like
> to pass on anything on the digital event horizon. If anyone who went to
> Dayton would like to borrow some column inches in QEX as hard data or a
> soapbox, please send me your comments.
>
> Thanks,
> Harold Price
>
I'll leave it to others to provide more details and, perhaps, offer
dissenting opinions, but in my view packet is alive, robust and
continuing to look to the future for faster ways to move information by
amateur radio.

Lots of TNCs sold by dealers, tons of folks (old-timers and newbies
alike) stopping by the TAPR booth, and solid participation in the SIGs,
the packet forum and the Packet Bash. APRS is hot. The call for radios
capable of higher speeds is growing loud. The desire for new, more
sophisticated BBS software is strong.

Fill in the details, folks. I had lots of fun and was sorry to see it
come to an end.

Dave Wolf WO5H

3. Re: [NETSIG:1196] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 1 May 1995 07:07:22 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950501070339.28226A-100000@acca>
Rendered body type: text/plain

On Sun, 30 Apr 1995, Steve Schmidt wrote:
> I like the idea of a radio on a card, and think that you shgould use a
> 16-bit interface. With the price of systems coming down, and the advantages
> that the extra 8 bits of address and IRQ's (<-very VERY important on
> resource-packed systems) it doesn't seem to make sense to "build for the
> past."
>
> Steve, N3QEM
>

Thank you Steve. Yes we have all suffered from the IBM Personal Computer syndrom which started with NO com ports.

73, de karl k5di

4. Re: [NETSIG:1197] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 1 May 1995 07:21:53 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950501071510.28226B-100000@acca>
Rendered body type: text/plain

On Sun, 30 Apr 1995, Bruce Perens wrote:

> I think having the IF live in the computer and the transverter live outside
> is a good idea. Would it be possible for the transverter to live on the
> other end of about 100 feet of cheap cable-tv feedline? I like to mount
> my RF equipment at the antenna, it saves me from having to spend on really
> good feedline or tolerate several dB of feedline loss. I've had a TEKK in a
> NEMA box on the roof for months now, and it seems to work fine that way.
>
>   Bruce
> --
>
> Attention Ham Radio Operators: For information on "Linux for Hams", read
> the World Wide Web page http://www.rahul.net/perens/LinuxForHams
>

Bruce the IF will be at about 10.7 MHz so if there is plenty of signal level a 100 foot run of Radio Shacks TV coax should introduce less than 1 DB of loss. Make the connectors good. I will remember to put lots of gain in the radio receiver part which is the weak link for your application.

Thanks for the thought. It is a good one.

73, de karl k5di

5. RE: [NETSIG:1196] Re: radios for speeds above 19200bps

From: "John W. (Bill) Hays, W0OMV" <billh@INS.INFONET.NET>
Date: Mon, 01 May 1995 10:13:53 CST
To: netsig@tapr.org
Message-ID: <0098FB34.B9CA0D69.265@INS.INFONET.NET>
Rendered body type: text/plain

Please, let's not forget there are some Macintosh users out there when considering a data bus approach or plug in card approach.
Perhaps the Mac will join the PCMIA or whatever it is called bus soon for all newer Macs. Problems arise when now 95 % of Mac gear is NUBUS. (My wild guess).
73, Bill

6. Re: [NETSIG:1204] Re: radios for speeds above 19200bps

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 01 May 95 11:25:11 EDT
To: netsig@tapr.org
Message-ID: <15021573.1a91@ram.net>
Rendered body type: text/plain

>From: "John W. (Bill) Hays, W0OMV" <billh@ins.infonet.net>
>Subject: [NETSIG:1204] Re: radios for speeds above 19200bps
>Date: Mon, 1 May 1995 10:20:19 -0500
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>
>Please, let's not forget there are some Macintosh users out there when
>considering a data bus approach or plug in card approach.
>Perhaps the Mac will join the PCMIA or whatever it is called bus soon for al

>l newer Macs. Problems arise when now 95 % of Mac gear is NUBUS. (My wild gu
>ess).
>73, Bill

Also >75% of the emitters are not end user devices, but network backbone
systems.

(Yes I know pc's are cheap, but they don't blend well into commerical
 installations when you are on a free ride...)

tom

7. Re: [NETSIG:1196] Re: radios for speeds above 19200bps

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Mon, 1 May 95 10:12:37 PDT
To: netsig@tapr.org
Message-ID: <9505011012.ZM6805@hanko>
Rendered body type: text/plain

On Apr 30, 6:55pm, Steve Schmidt wrote:
> Subject: [NETSIG:1196] Re: radios for speeds above 19200bps
> > > > >   Or you can wait a year and buy a whole data radio using SSB and
> > > > >trellis to pass data of 250 kb/s in the 219 MHz band. This one will work
> > > > >because I am building it....
> >
> >   I think using this appoach we save the user the cost of the P12
> > card at a very small incremental cost to the Data Radio. JDR Micodevices
> > has very nice breadboard cards and you buy the hardeware and software to
> > interface with the computer. A question is whether to make the card for
> > an 8086 bus or a newer 16 bit bus. The 8086 8 bit bus should work on
> > almost any newer computer but rather slower. If anyone has a strong
> > opinion I'm eager to hear it.
>
> I like the idea of a radio on a card, and think that you shgould use a
> 16-bit interface. With the price of systems coming down, and the advantages
> that the extra 8 bits of address and IRQ's (<-very VERY important on
> resource-packed systems) it doesn't seem to make sense to "build for the
> past."
>
> Steve, N3QEM
>-- End of excerpt from Steve Schmidt

You might consider PCI bus cards, since these can go faster,
and will be useful in power macs as well.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

8. Re: [NETSIG:1204] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 1 May 1995 15:09:19 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950501145608.23340A-100000@acca>
Rendered body type: text/plain

On Mon, 1 May 1995, John W. (Bill) Hays, W0OMV wrote:

> Please, let's not forget there are some Macintosh users out there when
> considering a data bus approach or plug in card approach.
> Perhaps the Mac will join the PCMIA or whatever it is called bus soon for all newer Macs. Problems
arise when now 95 % of Mac gear is NUBUS. (My wild guess).
> 73, Bill
>
        You are right Bill. But I don't know how to make anything that
will in a hardware sense work with a Mac. All my experiance is with the
PC and JDR does not even have a similar card for the MAC. So again I fear
the cost of supporting MAC will preclude doing so.

        I am under no illusions. If the cost of a complete data radio in
a box that will take less than a day to get working costs more than

$400.00 then It will not catch on. And all our work will be lost. I
cannot increase cost by making the whole radio outside so EVERYONE needs
to buy a special i-o card. Those cards cost $100+ as it is. That makes
the total cost $500 and that is unacceptable.

73, de karl k5di

9. Re: [NETSIG:1206] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 1 May 1995 15:22:48 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950501151251.23340B-100000@acca>
Rendered body type: text/plain

On Mon, 1 May 1995, Hank Oredson wrote:

>
> You might consider PCI bus cards, since these can go faster,
> and will be useful in power macs as well.
>
>   ... Hank
>
        Good idea Hank but am I wrong to say that only fairly new
computers HAVE a PCI bus? I think my 486-50 at work has the monitor
driver in a PCI bus. I read in Bit I think that PCI is still not a
standard and some older versions will not work with newer configurations.
I just looked and this IBM 486-66 I use does not have a PCI bus.

        The JDR Prototype cards come with PAL based decoder that is
proven to work well in 286/386/486 machines. Where will I find a similar
development Card for PCI and how can I modify my computer to run it?

73, de k5di karl

10. Re: [NETSIG:1208] Re: radios for speeds above 19200bps

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Mon, 1 May 95 14:57:58 PDT
To: netsig@tapr.org
Message-ID: <9505011457.ZM7059@hanko>
Rendered body type: text/plain

On May 1, 4:37pm, Klarsen wrote:
> Subject: [NETSIG:1208] Re: radios for speeds above 19200bps
>
>
> On Mon, 1 May 1995, Hank Oredson wrote:
>
> >
> > You might consider PCI bus cards, since these can go faster,
> > and will be useful in power macs as well.
> >
> >   ... Hank
> >
>   Good idea Hank but am I wrong to say that only fairly new
> computers HAVE a PCI bus? I think my 486-50 at work has the monitor
> driver in a PCI bus. I read in Bit I think that PCI is still not a
> standard and some older versions will not work with newer configurations.
> I just looked and this IBM 486-66 I use does not have a PCI bus.

Yup, only fairly new computers have a pci bus ..

>   The JDR Prototype cards come with PAL based decoder that is
> proven to work well in 286/386/486 machines. Where will I find a similar
> development Card for PCI and how can I modify my computer to run it?

Sorry I mentioned pci ... did not realize this project was constrained
to be ISA bus specific.

>
>
> 73, de k5di karl
>
>
>-- End of excerpt from Klarsen

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

11. Re: [NETSIG:1209] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 1 May 1995 17:10:48 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950501170134.2446B-100000@acca>
Rendered body type: text/plain

On Mon, 1 May 1995, Hank Oredson wrote:

> On May 1, 4:37pm, Klarsen wrote:
> > Subject: [NETSIG:1208] Re: radios for speeds above 19200bps
> >
> >
> > On Mon, 1 May 1995, Hank Oredson wrote:
> >
> > >
> > > You might consider PCI bus cards, since these can go faster,
> > > and will be useful in power macs as well.
> > >
> > >   ... Hank
> > >
> >   Good idea Hank but am I wrong to say that only fairly new
> > computers HAVE a PCI bus? I think my 486-50 at work has the monitor
> > driver in a PCI bus. I read in Bit I think that PCI is still not a
> > standard and some older versions will not work with newer configurations.
> > I just looked and this IBM 486-66 I use does not have a PCI bus.
>
> Yup, only fairly new computers have a pci bus ..
>
> >   The JDR Prototype cards come with PAL based decoder that is
> > proven to work well in 286/386/486 machines. Where will I find a similar
> > development Card for PCI and how can I modify my computer to run it?
>
> Sorry I mentioned pci ... did not realize this project was constrained
> to be ISA bus specific.

        It isn't constained to anything Hank. I could design to run in
all possible computers, but that might make the radio cost $1000. If I
design to run in a ISA bus then some high percentage of the current
computers in the WORLD can use it and the design tools are available and
cheap.

        This thing is for hams Hank. Got to think CHEAP, and if the ham
has to buy a brand new computer to use it it ain't cheap.

73, de karl k5di

        Thanks for the thoughts Hank. Better now than a year from now...

12. Re: [NETSIG:1207] Re: radios for speeds above 19200bps

From: "David Kelly" <dkelly@iquest.com>
Date: Mon, 1 May 95 21:13:57 CDT
To: netsig@tapr.org
Message-ID: <dkelly.1149768477G@mail.iquest.com>
Rendered body type: text/plain

>On Mon, 1 May 1995, John W. (Bill) Hays, W0OMV wrote:
>
>> Please, let's not forget there are some Macintosh users out there when
>> considering a data bus approach or plug in card approach.
>> Perhaps the Mac will join the PCMIA or whatever it is called bus soon for all
newer Macs. Problems arise when now 95 % of Mac gear is NUBUS. (My wild guess).
>> 73, Bill
>>
>   You are right Bill. But I don't know how to make anything that
>will in a hardware sense work with a Mac. All my experiance is with the
>PC and JDR does not even have a similar card for the MAC. So again I fear
>the cost of supporting MAC will preclude doing so.
>
>   I am under no illusions. If the cost of a complete data radio in
>a box that will take less than a day to get working costs more than
>$400.00 then It will not catch on. And all our work will be lost. I
>cannot increase cost by making the whole radio outside so EVERYONE needs

>to buy a special i-o card. Those cards cost $100+ as it is. That makes
>the total cost $500 and that is unacceptable.
>
>73, de karl k5di

Just make sure whatever you do is modular, so the RF and modem stuff can
be separated from the PC ISA stuff, and Mac users will be happy. The Mac
already uses 8530's for its serial ports, and with the addition of the
SoftKiss driver NetMac and Savant are just as happy as if they had a
"real" KISS TNC. (SoftKiss is not a Baycom Bit Banger.)

--
David Kelly N4HHE,   n4hhe@amsat.org,   dkelly@iquest.com

The human mind ordinarily operates at only ten percent of its capacity
-- the rest is overhead for the operating system.

13. Would Spread Spectrum work?

From: david@wilson.raider.net (David R. Wilson)
Date: Tue, 25 Apr 1995 22:15:43 -0600 (CST)
To: netsig@tapr.org
Message-ID: <m0s3yVs-0005IIC@wilson.raider.net>
Rendered body type: text/plain

Hi everyone,

After the NETSIG meeting at Dayton, it occured to me that
a different approach to the new 219 band might work.
Forgive me if I am not very knowledgeable about some of the
particulars, but this was the idea....

I don't know what the services on that band are presently using.
Can anyone fill me in on that?

Apparently the band is already in use, and has a few occupants that
are assigned primary status. Would it be possible to use spread
spectrum in that narrow of a bandwidth? If it was possible
to do so, and use FEC of some variety along with different encoding
schemes for different stations would that not reduce the probability
of any interference to the commercial stations that are active on that band?

What would be involved in asking the FCC to allow new spread
spectrum encoding schemes for the amateur service?

What bandwidth / baudrate would work in this narrow of a spectrum
and how many stations could coexist without causing major headaches
for the others?

Curious (and possibly slightly warped) minds want to know :-) .

Dave

--
David R. Wilson, WB4LHO
Smyrna, Tennessee USA
INET: david@wilson.raider.net
UUCP: ...!uunet!raider.net!wilson!david

14. Re: [NETSIG:1212] Would Spread Spectrum work?

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 2 May 1995 08:19:52 -0500
To: netsig@tapr.org
Message-ID: <199505021319.IAA26406@ns2.icon.net>
Rendered body type: text/plain

The ARRL had the FCC write the rules so that no one would use SS
below UHF. All the neat experiments were done at HF and VHF, but
the membership didn't want that stuff anywhere near their repeaters
and coffee nets.

Anyway 220 isn't a possibility for SS because of this.

I think the 220 band will probably be a duplicate of 145.01. That is
the baud rate will be higher, but cheap design will prevail. Thus
Omni antennas and circular routing.

I think packet radio is pretty much dead until we get past the Omni
antenna. We need a transportation system over land, but all we ever

get is a digipeater.

I'd like to see the SS rule opened up. Wherever CW is authorized, SS
can be used. I think each HF band should be used, with SSB made
obsolete :-) But, heck, it costs too much...
--
Steve/n5owk

15. Re: Would Spread Spectrum

From: srbible@cs.nps.navy.mil (Steven Bible)
Date: Tue, 2 May 95 09:34:19 PDT
To: netsig@tapr.org
Message-ID: <9505021634.AA16172@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

ssampson@icon.net (Steve Sampson) wrote:

>The ARRL had the FCC write the rules so that no one would use SS
>below UHF. All the neat experiments were done at HF and VHF, but
>the membership didn't want that stuff anywhere near their repeaters
>and coffee nets.
>
>Anyway 220 isn't a possibility for SS because of this.
>
>I think the 220 band will probably be a duplicate of 145.01. That is
>the baud rate will be higher, but cheap design will prevail. Thus
>Omni antennas and circular routing.
>
>I think packet radio is pretty much dead until we get past the Omni
>antenna. We need a transportation system over land, but all we ever
>get is a digipeater.
>
>I'd like to see the SS rule opened up. Wherever CW is authorized, SS
>can be used. I think each HF band should be used, with SSB made
>obsolete :-) But, heck, it costs too much...
>--
>Steve/n5owk

This is absolutely incorrect. There is an indefinant STA allowing
Spread Sectrum emissions on frequencies in the 50 MHz to 54 MHz,
144 to 148 MHz, and 222 to 225 MHz bands. Furthermore, sections
97.311(c) is waived which lifts the prohibition against hybrid SS
emissions and Section 97.311(d) is waived for use of other spreading
codes.

This has been in effect since April 17, 1992. All you have to do
is join the STA and you can do all of the above.

Granted, this does not cover the newly allocated 219 MHz band, but
it shows that SS emissions are allowed below 440 MHz.

You can also state your opinion to your ARRL district director and
tell him or her that you want the SS rules changed. There are
already changes in the works. Your job is to get involved and tell
the League want you want to see in the rules change for SS.

Steve, N7HPR
Naval Postgraduate School, Monterey, CA

16. Re: [NETSIG:1206] Re: radios for speeds above 19200bps

From: Klarsen <k5di@acca.nmsu.edu>
Date: Tue, 2 May 1995 12:09:28 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950502120346.29629B-100000@acca>
Rendered body type: text/plain

> You might consider PCI bus cards, since these can go faster,
> and will be useful in power macs as well.
>
>   ... Hank

        Hi again Hank. Today I talked with Dr. Elliot and he explained
the PCI bus, known as the "local bus" problems. He likes the NEC PCI
concept and the cost is low, but very few hams have computers with a PCI
slot.
        Elliot agrees that for maximum useability the 16 bit PAL system
that plugs into any slot in any computer with a 286, 386, 486 and 586 cpu
is the way to go. So this is the way we will go.

73, karl k5di

17. Re: [NETSIG:1214] Re: Would Spread Spectrum

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 2 May 1995 13:58:14 -0500
To: netsig@tapr.org
Message-ID: <199505021858.NAA03260@ns2.icon.net>
Rendered body type: text/plain

> There is an indefinant STA allowing Spread Sectrum emissions...
> This has been in effect since April 17, 1992.

I thought the hybrid, and spreading code relaxation part was more recent
than that.

> All you have to do is join the STA and you can do all of the above.

Sounds great. How do we join, who do we contact, what's next?
I'm interested. I want to participate, please fill us in.
--
Steve/n5owk

18. Re: [NETSIG:1204] Re: radios for speeds above 19200bps

From: pipe2@oeonline.com
Date: Tue, 2 May 95 16:11 EDT
To: netsig@tapr.org
Message-ID: <m0s6OI1-0002SBC@oeonline.oeonline.com>
Rendered body type: text/plain

>Please, let's not forget there are some Macintosh users out there when
>considering a data bus approach or plug in card approach.
>Perhaps the Mac will join the PCMIA or whatever it is called bus soon for
all >newer Macs. Problems arise when now 95 % of Mac gear is NUBUS. (My wild
guess).
>73, Bill

Apple is planning on switching all the macs over to PCI (starting with the
PPC604 macs), which is a platform-independant bus already well established
in Intel land. It is a tough bus to interface with, but it is worth it.

Maybe someday when we're running Gb/s packet we'll all have PCI TNC's ;-)

        -Bill

19. Re: [NETSIG:1217] Re: radios for speeds above 19200bps

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 2 May 1995 16:08:57 -0500
To: netsig@tapr.org
Message-ID: <199505022108.QAA07161@ns2.icon.net>
Rendered body type: text/plain

>>Please, let's not forget there are some Macintosh users out there when
>>considering a data bus approach or plug in card approach.

First develop a cheap prototype. If it works you can move it to any damn
card you want. What about the C-64 people? Makes as much sense to worry
about them as the mac people...

>Apple is planning on switching all the macs over to PCI

The Mac clones will be the ones to target. What are they going to use?
I only saw mention of the Texas company in the Wall St. J.

As far as current Macs: how come no one develops the built-in HDLC into
something for high speed packet? Maybe 128kbps into a FSTV 900 MHz with
its 4 MHz bandwidth :-) Lead the way with your "better" computer, etc.

Actually, my next computer will be Unix based (Linux) and probably not an
Intel CPU. 5 years from now Macs and Clones will be passe' just like the
C-64 is now. It'll be multi-CPU/multi-task/multi-whatever... I won't
want to waste my Linux experiance gained with the Vesa bus 486.
--
Steve/n5owk

20. [NETSIG:1200] Re: radios for speeds above 19200bps

From: WCHAST@delphi.com
Date: Tue, 02 May 1995 21:06:52 -0400 (EDT)

To: netsig@tapr.org
Message-ID: <01HQ1I9STAUA93F686@delphi.com>
Rendered body type: text/plain

Amen Brutha!! I have been preaching that for quite some time. 64kb would fit very nicely in several filter sizes, and it is a bit easier to derive.

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org X.121 3100813077

* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *

21. Re: [NETSIG:1207] Re: radios for speeds above 19200bps

From: rdonnell@mail.eskimo.com (Robert Donnell)
Date: Tue, 02 May 1995 20:16:28 -0700
To: netsig@tapr.org
Message-ID: <199505030316.AA11021@tia1.eskimo.com>
Rendered body type: text/plain

At least the older Mac's use a Z8530 for serial I/O, the same as the PI card. I don't know if (or at what performance level) the Mac will handle 250kbits reliably through that port, however since some of the early Mac hard drives talked via the serial ports, it seems possible. If so, perhaps no special I/O card would be needed for the Mac.

>
>
>On Mon, 1 May 1995, John W. (Bill) Hays, W0OMV wrote:
>
>> Please, let's not forget there are some Macintosh users out there when
>> considering a data bus approach or plug in card approach.
>> Perhaps the Mac will join the PCMIA or whatever it is called bus soon for all newer Macs. Problems arise when now 95 % of Mac gear is NUBUS. (My wild guess).
>> 73, Bill
>>
>   You are right Bill. But I don't know how to make anything that
>will in a hardware sense work with a Mac. All my experiance is with the
>PC and JDR does not even have a similar card for the MAC. So again I fear
>the cost of supporting MAC will preclude doing so.
>
>   I am under no illusions. If the cost of a complete data radio in
>a box that will take less than a day to get working costs more than
>$400.00 then It will not catch on. And all our work will be lost. I
>cannot increase cost by making the whole radio outside so EVERYONE needs
>to buy a special i-o card. Those cards cost $100+ as it is. That makes
>the total cost $500 and that is unacceptable.
>
>73, de karl k5di
>
>
>
>

73, Bob, KD7NM

Bob Donnell, KD7NM bob@kd7nm.ampr.org rdonnell@eskimo.com
Western Washington Amateur IP Address Coordinator (206) 775-3651
---

22. Re: [NETSIG:1214] Re: Would Spread Spectrum

From: david@wilson.raider.net (David R. Wilson)
Date: Wed, 26 Apr 1995 23:45:17 -0600 (CST)
To: netsig@tapr.org
Message-ID: <m0s4MO6-0005IIC@wilson.raider.net>
Rendered body type: text/plain

>
>
> ssampson@icon.net (Steve Sampson) wrote:
>
> >The ARRL had the FCC write the rules so that no one would use SS
> >below UHF. All the neat experiments were done at HF and VHF, but
> >the membership didn't want that stuff anywhere near their repeaters
> >and coffee nets.
> >

> >Anyway 220 isn't a possibility for SS because of this.
> >
> >I think the 220 band will probably be a duplicate of 145.01. That is
> >the baud rate will be higher, but cheap design will prevail. Thus
> >Omni antennas and circular routing.

I would hate to see that... I think that is a good reason that 145.01
is almost an absolute waste of time to use around this area, and
apparently other areas because it cannot handle the traffic that is
presently on it.

> >
> >I think packet radio is pretty much dead until we get past the Omni
> >antenna. We need a transportation system over land, but all we ever
> >get is a digipeater.

I would hope not, I have put two switches on the air, and granted they
are relatively slow, but I would hate to think that they were a dead
end technology. I think we have a choice, either do something better
or wait for the commercial services to eat our lunch, and take our
bands with them.

> >
> >I'd like to see the SS rule opened up. Wherever CW is authorized, SS
> >can be used. I think each HF band should be used, with SSB made
> >obsolete :-) But, heck, it costs too much...

Costs to much? I have the feeling that with a decent amount of effort
Spread Spectrum technology would not be all that much more expensive than
what it takes for some of this other packet gear. Granted there would
be some cost difference, but I think it would not be that sigificant.

The biggest headache that I see is the lack of available spectrum limiting
the bandwidth and throughput on 219. The interference to other stations
on the band would probably be less than what we can expect with current
56k or 9.6k FM or MSFK technology.

>
> This is absolutely incorrect. There is an indefinant STA allowing
> Spread Sectrum emissions on frequencies in the 50 MHz to 54 MHz,
> 144 to 148 MHz, and 222 to 225 MHz bands. Furthermore, sections
> 97.311(c) is waived which lifts the prohibition against hybrid SS
> emissions and Section 97.311(d) is waived for use of other spreading
> codes.
>
> This has been in effect since April 17, 1992. All you have to do
> is join the STA and you can do all of the above.
>
> Granted, this does not cover the newly allocated 219 MHz band, but
> it shows that SS emissions are allowed below 440 MHz.
>
> You can also state your opinion to your ARRL district director and
> tell him or her that you want the SS rules changed. There are
> already changes in the works. Your job is to get involved and tell
> the League want you want to see in the rules change for SS.
>
Thanks!... Yes, please tell me what has to be done to be added to the
STA list. I hope that it would be possible to get the rules modified a
bit to include the 219 band. I think the ideas that the ARRL had were
basically pretty sound, but it looks to me that if spread spectrum could
be used in that narrow of a space it would be advantageous for all the
services. I would think since the commercial services have priority
that it would be worthwhile to do something to decrease any possibility
of interference.

Dave

--
David R. Wilson, WB4LHO
Smyrna, Tennessee USA
INET: david@wilson.raider.net
UUCP: ...!uunet!raider.net!wilson!david

23. Spread Spectrum

From: Klarsen <k5di@acca.nmsu.edu>
Date: Wed, 3 May 1995 07:56:33 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950503073745.13020A@acca>
Rendered body type: text/plain

I hate to throw cold water on the guys talking about spread spectrum and it's ability to co-exist with other users. Alas there has never been a free lunch! What happens when a Spread Spectrum (SS) station transmits is a small increase in the noise level of a narrow band receiver in the SS passband.

Now the SS receiver should not be bothered by a narrow band transmitter because it is not a SS signal. In actual testing however we in the Army found that SS is jammed by narrow signals usually by saturating the receiver front end. This was easy to do.

As more SS stations get on the narrow band user has more noise in his receiver. At some point his noise level gets too large and his system fails.

Now to something I have no experiance with...narrow band SS. My gut feeling is that a signal 3 MHz wide using frequency hop or direct sequence SS will show a very small increase in system gain and will make a lot of noise in the narrow bandwidth.

The system I have experiance with had a 100 MHz bandwidth!! It demonstrated a 45 DB increase in signal over noise!! It was a real hummer. But with a spectrum analyzer I was able to see the 100 MHz signal as a resolvable noise in a defined bandwidth of 100 MHz. From a military point of view this was bad news.

My message is this. Don't expect to run SS and not interfer with other users. You will interfer and maybe in a way that is very bad when using narrow band SS.

73, karl k5di

24. re: [NETSIG:1194] Higher Speed radios and modemd

From: <rhallman@NVRNO.ANG.AF.MIL> (TSG, RICHARD, MAA, 569)
Date: Wed, 3 May 95 3:56:04 PDT
To: netsig@tapr.org
Message-ID: <,og8+4Gqdja@NVRNO.ANG.AF.MIL>
Rendered body type: text/plain

Since we are on Radio's for Higher speeds.....I have a question.

I have been informed that Digi-Key sells Monolithic Crystal filters for 10.7 Mhz IF and 25 Khz Channel spacing. I have had an order in with Digi-Key for over a month and these filters are backordered till Mid may. Also the 120 Khz 10.7 Mhz Ceramic filters they sell are also backordered till mid May. My question....

We are building a 9600 baud backbone system across Nevada with a bunch of UHF Mitreks we have. We also wanted to play at 19.2 with the 120 Khz ceramic IF filters. Since the availability of these filters are hard to find, I was wondering if anybody had another supplier for these filters, or something that could replace the Digi-Key versions.

TNC's we are using are the Spirit II's, we have 9 Spirit II TNC's ready to be installed on the Mitreks as soon as we can find a REAL supplier for the IF Filters. If you havent used or seen a Spirit (Sprint) II TNC....These are FANTASTIC TNC's!! Well worth the money....

Rich KI3V/7

Thanks for the help!!

25. Re: [NETSIG:1222] Spread Spectrum

From: "Gary McDuffie, Sr." <mcduffie@hannibal.wncc.cc.ne.us>
Date: Wed, 3 May 1995 10:02:25 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9505030915.A14824-0100000@hannibal>
Rendered body type: text/plain

Karl:

Thank you for putting out that info on SS. I've been screaming that for

years now. People don't seem to understand that SS is not a cure-all.
When you raise the noise level on the spectrum, all suffer. The more
stations are hopping, the more they all suffer. It's just like the early
advertising gimmick to sell packet radio to everyone that said that all
these people can coexist on a single channel at the same time. That's
bull, and we all know it. The more people, the slower the throughput.
Yes, at first, it seems to work fine. But, so did packet when there were
only you and your neighbor doing the testing. When the whole world got
on, the whole thing went down the tubes.

Again, thank you VERY much for the experienced input.

73, Gary

26. Spread Spectrum

From: Tim Baggett <tim@NMSU.Edu>
Date: Wed, 3 May 1995 10:26:13 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.87.9505031012.B22765-0100000@wilma>
Rendered body type: text/plain

Just a few comments on the Spread Spectrum stuff. I don't have any
experience with SS hardware, only some simulations I've played with on my
own and the coursework.

Anyhow, direct sequence spread spectrum is actually transmitted with a
power spectral density well below the noise level, isn't it?

Now a narrowband signal saturating the front end of a SS receiver might
be a possibility. However, assuming the interfering signal is not
overloading the front end (this is amateur radio and hams don't
intentionally interfere with others as would be found in a military
application - yeah right) when the narrow band signal is spread in the
process of despreading the SS signal in the receiver, thereby reducing
the narrowband signal's impact on the SS signal.

I would like to see some high speed SS stuff for ham radio. I noticed the
ARRL has a SS book. It looks very good - I spend quite awhile at the
local 'candy store' reading the book.

73,
Tim AA5DF
tim@nmsu.edu

27. Re: [NETSIG:1224] Re: Spread Spectrum

From: ssampson@icon.net (Steve Sampson)
Date: Wed, 3 May 1995 11:57:01 -0500
To: netsig@tapr.org
Message-ID: <199505031657.LAA00120@ns2.icon.net>
Rendered body type: text/plain

>Karl:
>
>Thank you for putting out that info on SS. I've been screaming that for
>years now. People don't seem to understand that SS is not a cure-all.

So who's looking for a cure-all? The simple fact is that high speed
requires high bandwidth. You can do it conventionally, with one at a time
usage, or you can multiplex many users (say 8) with different PN codes.
Now that you know, you can stop screaming.

>When you raise the noise level on the spectrum, all suffer. The more
>stations are hopping, the more they all suffer.

It sounds like you believe that all the packet radio stations are going
to be transmitting 100% of the time. I don't see much change from what
exists now: one station serving one or two users at any five minutes.

> It's just like the early advertising gimmick to sell packet radio to
> everyone that said that all these people can coexist on a single
> channel at the same time. That's bull, and we all know it.

The reason it doesn't work is that the PPERSIST and SLOT are user
adjustable. Users adjust it off. Combined with low power, poor
"OMNI" antenna's, and NO planning, we got what we deserved :-)

>Again, thank you VERY much for the experienced input.

My experiance was a little different. During the Poland Crisis in 1980-81

the aircraft I crewed had only HF and UHF TADIL (Data Link). This was to participate in the German Air Defense system. If you've ever seen a radar display during the time the country was divided, you would see that it is one of the most dense flying environments anywhere. TADIL uses DSB on HF, and FM on UHF, using multiple tones on a narrow channel. Some shmuck on a boat could easily wipe out the link intentionally or not. To make a long story short, we didn't have the bandwidth to track many targets, so we only gave em the hot ones. During the Iraq war my aircraft had been fitted out with JTIDS, an SS system. Using two horn antennas, nose and tail, we could communicate with the other two aircraft at the front, and the SAM sites. Three planes covered from the Gulf to Israel, and never once ran out of bandwidth. It also combined tracks and points, with text and voice. Combined with all those benefits, it operates in a dense spectrum of DME and IFF/SIF pulse emmiters, so it has to be programmed not to interfere, or be interfered with.

Now tell me about your noise problem... :-)
--
Steve/n5owk

28. Re: [NETSIG:1225] Spread Spectrum

From: mark@tetherless.com (Mark Oppenheim)
Date: Wed, 3 May 1995 10:11:35 -0700
To: netsig@tapr.org
Message-ID: <199505031711.KAA15593@gorgor.pa.tetherless.com>
Rendered body type: text/plain

At 11:42 AM 5/3/95 -0500, Tim Baggett wrote:

Parts omitted...

>
>Anyhow, direct sequence spread spectrum is actually transmitted with a
>power spectral density well below the noise level, isn't it?

No, it only appears that way at the recieving end, ie: if you are close enough to the signal, you do see it's characteristic sine X/X pattern. Of course, the low power density makes it fade into the noise floor of your radio very rapidly as distance/attenuation increases.

>Now a narrowband signal saturating the front end of a SS receiver might
>be a possibility. However, assuming the interfering signal is not
>overloading the front end (this is amateur radio and hams don't
>intentionally interfere with others as would be found in a military
>application - yeah right) when the narrow band signal is spread in the
>process of despreading the SS signal in the receiver, thereby reducing
>the narrowband signal's impact on the SS signal.

The sad truth is, that most, if not all SS radios commercially made have a poor process gain specification. The FCC requires a process gain of 10, and most claim to meet or exceed it, and probably do "in the lab" but in the real world, it sometimes is at or less than half that. They are certainly sensitive to interference even with even low-level CW signals. I had the chance to play with some Proxim modems a while back, and found that low-level signals within the passband (not necessarily centered) would crush throughput.

>I would like to see some high speed SS stuff for ham radio. I noticed the
>ARRL has a SS book. It looks very good - I spend quite awhile at the
>local 'candy store' reading the book.

Once the FCC starts allowing more than the limited set and technique of spreading data, this would be a good idea. This is something that the ARRL is working on and hopefully will be changed. As the rules are now, you can't legally use any of the commercial SS radios in the amateur band in an amateur application! There are a number of SS books out now that are much better than the ARRL book. The ARRL book is great if you want to copy or improve someone else's work, but does not go into some of the more subtle areas of SS and the commercial uses of the mode.

A better amateur application is to have some spectrum set aside for SS only, if direct sequence is going to be successful in a ham radio scenario until the technology and price can catch up with the amateur radio world.

Mark
KD6KQ

29. Re: FW: [NETSIG:1217 & 1215] Re: radios for speeds above 19200bps

From: DJ Gregor <dgregor@coil.com>
Date: Wed, 3 May 1995 15:52:11 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199505031952.PAA05821@bronze.coil.com>
Rendered body type: text/plain

> Am I the only one that thinks these guys have their head screwed on
> backwards? Thought about including further negative thoughts on the
> subject but figured it wouldn't accomplish anything.

No you're not the only one. I've noticed a large number of crazy ideas in the fairly short amount of time I have been on the Internet.

> I'm begining to really look forward to a non-TNC on ethernet.

SO AM I!! (sorry to yell, but I am looking forward to an easy to use piece of amateur networking equipment.)

-D.J. Gregor

30. Re: [NETSIG:1220] Re: radios for speeds above 19200bps

From: "David Kelly" <dkelly@iquest.com>
Date: Wed, 3 May 95 21:24:47 CDT
To: netsig@tapr.org
Message-ID: <dkelly.1149941927H@mail.iquest.com>
Rendered body type: text/plain

>At least the older Mac's use a Z8530 for serial I/O, the same as the PI
>card. I don't know if (or at what performance level) the Mac will handle
>250kbits reliably through that port, however since some of the early Mac
>hard drives talked via the serial ports, it seems possible. If so, perhaps
>no special I/O card would be needed for the Mac.

Once Upon A Time it was popular to use an external box to clock the Mac's 8530 at 800 to 950 kHz for faster LocalTalk. The problem was not the hardware's abilitiy to handle it, but the network media's ability to carry the signal. Then when coupled with protocol timing constraints specific to LocalTalk, the net improvement was only 10% to 20%. The fad lasted only 6 months or so.

So what is being done about Amateur Packet Protocols to make them worthwhile at 250k? Remember 2400 baud? With AX.25 it is barely faster than 1200. Today 9600 often performs only 2 to 3 times 1200, and then only with the largest packets and largest MAXFRAME.

73,
--
David Kelly N4HHE, n4hhe@amsat.org, dkelly@iquest.com

The human mind ordinarily operates at only ten percent of its capacity
-- the rest is overhead for the operating system.

31. T1 modems?

From: pat@gw-ais-windstar.windstar.net (Patrick A. Green)
Date: Wed, 03 May 1995 21:51:16 -0500
To: netsig@tapr.org
Message-ID: <199505040253.VAA05489@gw-ais-windstar.windstar.net>
Rendered body type: text/plain

Hello All,

I know that there is a T1 modem by ka7oei. Does anyone have any info regarding this modem or any other modems that are at T1 speeds? I and some others are interested in this speed modem. Any info is appreciated.

73 de Pat --- KA9SCF.

pat@linux.windstar.net

32. Re: [NETSIG:1223] re: Higher Speed radios and modemd

From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 4 May 1995 11:19:27 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950504072706.26379A-100000@acca>
Rendered body type: text/plain

On Wed, 3 May 1995 rhallman@NVRNO.ANG.AF.MIL wrote:

>   Since we are on Radio's for Higher speeds.....I have a question.
>
> I have been informed that Digi-Key sells Monolithic Crystal filters for
> 10.7 Mhz IF and 25 Khz Channel spacing. I have had an order in with Digi-Key
> for over a month and these filters are backordered till Mid may. Also the
> 120 Khz 10.7 Mhz Ceramic filters they sell are also backordered till mid May.
> My question....
>
        That is bad news! I better get my order in fast!

> We are building a 9600 baud backbone system across Nevada with a bunch of
> UHF Mitreks we have. We also wanted to play at 19.2 with the 120 Khz ceramic
> IF filters.   Since the availability of these filters are hard to find, I was
> wondering if anybody had another supplier for these filters, or something
> that could replace the Digi-Key versions.

        If your on quiet hills I think you can just remove the filter in
the 455 KHz section and then have at least 60 KHz of bandwidth. Not sure
since haven't measured it with a spectrom analyzer.

>
>   TNC's we are using are the Spirit II's, we have 9 Spirit II TNC's ready to
> be installed on the Mitreks as soon as we can find a REAL supplier for the IF
> Filters. If you havent used or seen a Spirit (Sprint) II
> TNC....These are FANTASTIC TNC's!! Well worth the money....
>
>   Rich KI3V/7
>
>
>   Thanks for the help!!
>
        Hope the kiss works in your TNC Rich. There has been some
problems with the "e-prom" switch. If kiss doesn't work try the other
position of that switch; never mind what the book says...hi

73 de karl k5di

33. RE: T1 modems

From: turner@vsat.ussc.com
Date: Thu, 4 May 95 13:36 MDT
To: netsig@tapr.org
Message-ID: <9505041337.AA26994@vsat.ussc.com>
Rendered body type: text/plain

I am somewhat reluctant to do this (as the hardware has not *yet* been installed
and put into service, but for the past year-and-a-half (or so) we (UPRA - Utah
Packet Radio Association) have been working to put some T1-rate full-duplex
microwave links online.

Here is the overview of the modem (stated very succinctly):

- This is a pre-alpha test modem. They have been extensively bench tested.
They have also been tested in loopback configuration using test oscillator.
They have also been "across the lab" tested on the microwave gear. They
have *NOT* been tested for any length of time over the intended path.
This will be done as soon as time permits.

- This is ***NOT*** a T1 modem per se (i.e. no DS0's, B8ZS, etc. etc...)
It is a straight "Data In, Data Out" modem. It is, rather, a "T1-rate" modem.

Here is a brief description of the modem system:

Transmit modem:
- The transmit bitrate is established by a quartz crystal operating at 16x the
desired data rate (i.e. ours use 24 MHz crystals, resulting in a 23.995 MHz
master clock, and a bitrate of 1,499,500 BPS (approx.) We could have custom-
ordered a crystal to put it on 1.544 or something, but why bother?)
- The transmit data is scrambled according to the same 17 bit sequence that
the K9NG/G3RUH/WA4DSY modems use.
- The output data is bandwidth-limited/shaped baseband using a 3rd order Bessel
filter (F3db = 0.532* bitrate) as suggested in G3RUH's article "The Shape of
Bits to Come". This produces a beautiful baseband Eye-pattern.
- This baseband output is then applied to a wideband FM transmitter to produce
FSK. The -60db bandwidth of a well-behaved transmitter can be on the order
of 5 MHz or less (depending on other factors, of course.)

Receive modem:
- The current design uses an MC13055 to convert a 70 MHz IF to baseband. The
received baseband is amplified and sent to the "Analog Signal Input". The
built-in slicer on the '13055 is used to generate a 'raw data output' which
is sent to the clock recovery circuit. An analog slicing voltage is also
developed.
- The "raw data" is applied to a clock recovery which implements a VCXO
operating at 16 times the bitrate. In testing, the clock recovery can
lock onto a signal that has an almost unrecognizeable eye pattern with only
a few degrees (10 or so) of phase inaccuracy. It has about 10 db of
hysteresis (i.e. it takes a better signal to acquire lock than to hang onto
it...)
- The "raw analog data" is synchronously demodulated using an integrate-and-
dump scheme. This data is descrambled and sent to the receive data device.

Both the transmit and receive modems supply clock TO their respective
data devices.

Some comments:

- NO! I *DO NOT* have circuit boards made. I have *NO* intention of even
considering their design/layout/construction until the design has been
tested/refined. I would be VERY surprised if this first stab is
optimal!
- NO! I *DO NOT* have circuit boards made. (Hey, I just said that...)
- I am re-designing the "input" board to take baseband receive, rather
than 70 MHz IF. This is because the MC13055 isn't nearly as good as
the 600 channel baseband demod/amplifiers that we have available on
our equipment. Having design of both is more flexible, anyway.
- The TTL-Level outputs of these modems are converted to RS-422. These
are thrown at Gracilis Packetens, currently, one of the few (affordable)
things (relatively speaking) that can handle the throughput!
- If you think using the GRAPES modems is difficult, these are even more
difficult to use! (Or are they? You can build the transmitter/receiver
that will go several miles for less than $60 in silicon...)
- The Clock recovery lock time is on the order of a 100-300 milliseconds.
This is not important for full-duplex links, though.
- Yes, I know that the receiver filter is mismatch (a square-wave type
integrate-and-dump receiving a sine-shaped waveform?) Perhaps a
center-sample might work better? 'Dunno, but we plan to try it, too.
- This modem will handle whatever you throw at it. It could be
synchronous, asynchronous (bitwise, anyway), or whatever. It could
be NRZ, or NRZI, or anything (NOT AMI, though:-) We use NRZ,
though...

The current design uses HC Logic. It is pushed reasonably close to its
limits in this implementation, but it could likely be run at 2.048 with
some minor modifications. It can certainly be run more slowly. In fact,
we are looking at building some slower ones (200k-300k) to use with PI2
cards on the gateway.

There is documentation available for this, as well as schematics (in electronic
form, in HP-GL and PCL4 format). Email me if you are interested. Keep in
mind that this modem is *not* particularly simple (not as bad as the GRAPES
modem, though). I will consider making it available via anonymous FTP.

Other projects: (Well, this one is pretty time-consuming, but) we have
contrived a block-code FEC scheme (BCH) using standard parts.
Initially, it will use 15 bits to send 7 bits of data, and allow for 2
corrupt bits in each 15 bit block. Once this is done, block interleave
schemes may be tried.

I hope this answers some questions...

<Clint>
turner@vsat.ussc.com

--- REUNITE PANGEA!!!

34. Re: Spread Spectrum

From: ferracci@dialup.francenet.fr (Laurent Ferracci - F1JKJ)
Date: Fri, 5 May 1995 06:58:14 +0200
To: netsig@tapr.org
Message-ID: <199505050458.GAA06522@chleuasme.francenet.fr>
Rendered body type: text/plain

Could someone give some info about commercial SS modems, or a way to get some ?

Here, in our good old France, we don't know anything about this ;-)

I have a few questions abour commercial SS units: Which frequencies are
used, is the modem complete (with RF transmitter/receiver inside), what is
the price...

I also read about books: Could you please give titles / editor ?

Thanks a lot. If you have something that would sound like an ad, Email it to
me rather than here !

Laurent, F1JKJ
/\
             Laurent Ferracci - F1JKJ
                  F1JKJ@amsat.org
               Fidonet 2:323/22.1
             Compuserve ID 100407,436
 \/

35. Re: [NETSIG:1232] RE: T1 modems

From: Fredrik Bonde <e89_bond@etek.chalmers.se>
Date: Fri, 5 May 95 7:54:29 GMT-1:00
To: netsig@tapr.org
Message-ID: <9505050554.AA02066@quarl0.etek.chalmers.se>
Rendered body type: text/plain

Hi there,

Clint, your T1 rate modem looks VERY interesting to me.

> There is documentation available for this, as well as schematics (in electronic
> form, in HP-GL and PCL4 format). Email me if you are interested. Keep in
> mind that this modem is *not* particularly simple (not as bad as the GRAPES
> modem, though). I will consider making it available via anonymous FTP.

I'd prefer HP-GL, but PCL could be ok as well.

> I hope this answers some questions...

Thanks!

73 de Fredrik

   I likhet med Mozart, Beethoven och en kille som heter Gustavsson
     i]motfors, har jag vigt mitt liv }t musik.
                                                  M B Tretow

 Chalmers   I Fredrik Bonde   I e-post: e89_bond@etek.chalmers.se
 Tekniska   I Gibraltargatan 82-149 I packet: SM6UBC @ SK6YW.O.SWE.EU
 H|gskola   I 412 79 G|teborg   I   tel: +46-(0)31-20 88 76
            I SWEDEN   I

      ----

36. Re: T1 modems (a bit more info...)

From: turner@vsat.ussc.com
Date: Thu, 4 May 95 16:02 MDT
To: netsig@tapr.org
Message-ID: <9505041603.AA27667@vsat.ussc.com>
Rendered body type: text/plain

This is not concerning the T1-rate modems, but rather the radios with
which they are implemented.

The modems are designed to produce baseband modulation, and (after a
fashion) receive and demodulate baseband modulation.

We (UPRA) have been fortunate to have acquired some older commercial
microwave gear.

A rack of GE TRS-696B (6.8 gig solid state) was disassembled. Useful
parts included the receiver demod (70 meg) and the transmitter baseband
and Power Oscillator modulator. The Varactor quadrupler was re-worked
into a varactor doubler. This has resulted in a measured power output
of about 4 watts on the 3.7 gig band. For the receive chain, a
Downeast Microwave transverter board is used.

Farinon SS-2000's have been modified. These were moved from their
original 1.8 gig region to the 13cm band. The split is (approx.)
2307.5 MHz to 2418 MHz. These run about 1 watt or so.

Farinon SS-6000's have been looked at. With only moderate mod-
ification to the multiplier modulator, about 250 milliwatts was
acheived at 5.65 Gig. This is a far cry from the original 1-1.5
watts, but we figure that some simple machining should help (after
all, several of the tuning screws were bottomed out...)

The equipment that will go online in the nearest future is the 2 gig
gear. This is sitting in a pile. We need to re-tweak one of the
transmitters, and hopefully, the thing will simply start
talking in both directions.

We are not considering 23cm at this point because we would need
a split (inband) for this. The fact that FAA RADAR operates
locally precludes straight FSK from operating with a consistantly
low BER... We have been "reserving" use of the 33cm band for
something else.

We have considered experimentation at 10 gig (the Glenn Elmore
data link has been considered, and should do full-duplex
with some additional circuitry [it should be noted that
while Gunn transceivers are inherently "full duplex", you
run into trouble if you actually *try* it! Think about it:-])
but we have been busy enough as it is...

Actually, constructing a transmitter for this would be very
easy: Just modulate the VCO with the baseband signal. Reception
is easy too: Downconvert the receive frequency to, say, 70 MHz,
and run it into an MC13055 (like the one in the T1-rate modem...)
BTW, you *CAN* get the MC13055 from Newark Electronics... Every
time I've ordered them, they've had them...

Other projects of interest: An inband 220 MHz 56kbaud GRAPES
modem-based repeater. I ran across some 28 MHz crystal filters
that appear to work in this application...

(As if we didn't have enough to do) UPRA is also upgrading the
local user network to tie 1200 bog frequencies via 9600 baud.
This network, as it is evolving, gets tied into the rest of the
network. Also, preliminary design work has started (based on
what we are finding out on the microwave design work) on a
hub-based system in the 2-3 gig range that should use FEC (the
block-coding system using conventional parts...) Of course,
if some *real* FEC chips became reasonably available, we'd use
those instead:-]

<Clint>

turner@vsat.ussc.com
ka7oei@uugate.wa7slg.ampr.org

--- REUNITE PANGEA!!!

37. Re: [NETSIG:1223] re: Higher Speed radios and modemd

From: ferracci@dialup.francenet.fr (Laurent Ferracci - F1JKJ)
Date: Sun, 7 May 1995 08:44:46 +0200
To: netsig@tapr.org
Message-ID: <199505070644.IAA21921@chleuasme.francenet.fr>
Rendered body type: text/plain

> If you havent used or seen a Spirit (Sprint) II
>TNC....These are FANTASTIC TNC's!! Well worth the money....
>

Does the user manual deals with high speed (57K6) operation ?
If so, what does it says about radio to be used ?
/\
             Laurent Ferracci - F1JKJ
                  F1JKJ@amsat.org
                Fidonet 2:323/22.1
             Compuserve ID 100407,436
 \/

38. [NETSIG:1236] re: Higher Speed radios and modemd

From: WCHAST@delphi.com
Date: Sun, 07 May 1995 11:18:23 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HQ7X5XAR2Q9727DA@delphi.com>
Rendered body type: text/plain

All the manual deals with is the operation of the RUH modem, which is basicly
the
same across all speeds, the only thing is that the low freq component goes up
as
the baudrate goes up, same of course for the high freq component.

The problem is still the RF (or lack of) part of the equation. Until we get
low
cost RF that we can plug these things into, we are still out in the cold.

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org   X.121 3100813077

* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *

39. Information on Protocols

From: DAVE@sectel.com
Date: Wed, 10 May 1995 08:10:30 GMT0
To: netsig@tapr.org
Message-ID: <199505100721.CAA12951@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Has anyone got a good source of information on the various layer 3/4
protocols? I can just about cope with Netrom but I would like to find
out more about the workings of ROSE, Texnet etc

Dave
--
djh@sectel.com
Tel +44 1285 655 766
Fax +44 1285 655 595

40. Re: [NETSIG:1238] Information on Protocols

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 10 May 95 11:14:28 EDT
To: netsig@tapr.org
Cc: rose@overleaf.com (ROSE LIST)
Message-ID: <15021573.1ab0@ram.net>
Rendered body type: text/plain

>Has anyone got a good source of information on the various layer 3/4
>protocols? I can just about cope with Netrom but I would like to find
>out more about the workings of ROSE, Texnet etc
>
>
>Dave
>--
>djh@sectel.com
>Tel +44 1285 655 766
>Fax +44 1285 655 595

ROSE is as follows:

L2 - AX.25 2
L3 - ISO 8208 (aka X.25 Packet Layer)
L4 - What ever you send from your station

     Typically people run anything from Just TNC data to IP or NetROM (ala
     G8BPQ)

The bottom line is that if you can put in an AX.25 frame ROSE will pass it.

tom

41. Utah T1-rate modem info via anon FTP

From: turner@vsat.ussc.com
Date: Wed, 10 May 95 20:25 MDT
To: netsig@tapr.org
Message-ID: <9505102026.AA14019@vsat.ussc.com>

Rendered body type: text/plain

The information for the Utah T1-rate modem is now available via anonymous FTP.

The site is:

uugate.aim.utah.edu   (from the internet)

or:

uugate.wa7slg.ampr.org (from the amprnet)

The file is in the 'T1MODEM' directory and it is called:

T1MD9505.EXE

MAKE SURE YOU SWITCH TO BINARY MODE (BIN) BEFORE FILE TRANSFER!!!

This file contains:

- A text file explaining how to print the documents to a laser printer and/or a plotter.
- A text file documenting the design and operation of the circuit, as well as additional comments that were deemed pertinant.
- The schematics themselves. There are three schematics, and they are in both HP-GL and PCL4 formats. HP-GL lends itself to paper/pen plotters (B-size or larger is recommended) while PCL4 works for laser printers. The former is recommended.

The file is a self-extracting ZIP file to be run under DOS. I believe that newer versions of PKUNZIP will also unzip it in its .EXE form, as well...

The filesize should be: 314444 bytes.

Brief overview of the modem:

- The Utah T1 modem consists of a baseband transmitter. It produces a band-width-limited baseband data stream ("Eye Pattern") with a 1.5 MHz band-width. The data is scrambled according to the X=1+X(E-5)+X(E-17) scheme, the same scheme employed by the K9NG/G3RUH-type 9600 baud modems and the 56 kb/s WA4DSY modem. The modem supplies the transmit data clock (derived from a crystal operating at 16 times the bit rate) and data may be presented to the modem in any 0-1 form (i.e. NRZ, NRZI, etc.)

- The receive modem needs three inputs: Analog baseband data, "Raw" sliced data, and a slicing level. The "Raw" sliced data is used to derive the clock from the received signal. The slicing level is set to a voltage equal to the "zero crossing" point of the received "eye" pattern and the analog baseband signal is applied to an integrate-and-dump filter and applied to a slicer, and descrambled. The receive modem presents both data output and recovered clock output lines. Clock recovery takes between 100 and 300 milliseconds, typically, but since these modems are designed for full-duplex operation, that is not important.

- The third drawing depicts a circuit (using the Motorola MC13055) that takes a 70 MHz IF, demodulates it, amplifies, slices it (to provide the "Raw" sliced data) and provides the baseband analog data. I'll design a version of this circuit that works directly from baseband input as soon as I get a free microsecond to do so...

If you get this information, PLEASE READ THE DOCUMENTATION CAREFULLY before you make any comments. Also, if you feel it necessary to make any criticisms of the design, etc, PLEASE make SURE you present a proposed SOLUTION! The intent here is to IMPROVE the existing (PRELIMINARY!!!) design and *not* to simply beat up on the designer/author.

THERE ARE ***NO*** CIRCUIT BOARDS DESIGNED FOR THIS MODEM! Also, there are NO specific radios that I have in mind for use with this modem! Since it is a baseband modem, commercial microwave radios may be employed, provided that they can be modified to have the necessary frequency response! (i.e. a 600 channel radio probably does, provided that ones takes care of the orderwire channel...)

73

<Clint>

Internet: turner@vsat.ussc.com
Amprnet: ka7oei@uugate.wa7slg.ampr.org

P.S. I'm not too keen on sending out paper copies of these documents, so if you can't print 'em, get a friend to do it... Sorry...:-)

--- REUNITE PANGEA!!!

42. TINY-2 and Network code

From: paul@paccomm.com
Date: Mon, 08 May 95 14:15:21 UTC
To: netsig@tapr.org
Message-ID: <3406@paccomm.com>
Rendered body type: text/plain

Just a reminder that with TINY-2's that have version 1.8 of the
board and later YOU DO NOT HAVE TO MODIFY THE TNC TO RUN NETWORK CODE!!!
Simply move JMP-1 from the rear two pins to the front two pins and
the TNC then runs code with the STA LED indicating bank switch
activity (it will be rather dim and give flickers as the two sides
of the bank are activated).

I have asked Dave Roberts to include the above in the TheNet
documentation. It's covered in our documentation, but nobody seems
to be bothered to read it   (:-(

Regards, Paul.

_ _
Paul Evans, W4/G4BKI   paul@paccomm.com
+1 (813) 874-2980 Fax:+1 (813) 872-8696
Views expressed here are not necessarily those of PacComm.
I don't surf the internet, I SAIL IT!
Captain of S/V "Spindrift" (Catalina 36), Dunedin, FL.
PacComm Packet Radio Systems, Inc., 4413 N. Hesperides St., Tampa, FL 33614-7618

43. FASSSSSSST Data

From: paul@paccomm.com
Date: Thu, 11 May 95 14:45:51 UTC
To: netsig@tapr.org
Message-ID: <3546@paccomm.com>
Rendered body type: text/plain

Hi. Saw Chuck Hast mention Gunnplexers, etc.
At the first public showing of the G3RUH modem at the Sysops meeting
in Yorkshire, England back in 1987 or 1988 (I forget which),
James used some Plessey or Solfan Gunn transceivers as used in
automatic door openers. It was a quick a dirty way to get on
super wideband FM. Of course, you can use 100MHz as your first IF
and just use a gutted FM Band II radio for the receiver. Feed your
modulation directly onto the Gunn via a deviation pot. and coupling
C. It's good fun! You can get super high quality audio this way.
Just attach an electret mic. and see how gooooooood it is!
Plessey and Solfan units both used Plessey Gunn diodes, which I was
in charge of designing at the time! These units (with Schottky
detector diodes for receive) can still be found at radio rallies
(HamFests) for around L10 or US$15. Not a bad buy.
Other units to look for are ex-radar TWT replacement strips.
These should be good for making a really good 2.4GHz system.
Bye. P.

_ _
Paul Evans, W4/G4BKI   paul@paccomm.com
+1 (813) 874-2980 Fax:+1 (813) 872-8696
Views expressed here are not necessarily those of PacComm.
I don't surf the internet, I SAIL IT!
Captain of S/V "Spindrift" (Catalina 36), Dunedin, FL.
PacComm Packet Radio Systems, Inc., 4413 N. Hesperides St., Tampa, FL 33614-7618

44. TAPR 1.1.9

From: Fredrik Bonde <e89_bond@etek.chalmers.se>
Date: Fri, 12 May 95 0:58:55 GMT-1:00
To: netsig@tapr.org
Message-ID: <9505112259.AA08117@quarl0.etek.chalmers.se>
Rendered body type: text/plain

Hi there,

Where can I find the EPROM files and doc. for TAPR 1.1.9?

73 de Fredrik

```
      ------------------------------------------------------------

   I likhet med Mozart, Beethoven och en kille som heter Gustavsson
     i ]motfors, har jag vigt mitt liv }t musik.
                                                    M B Tretow

 Chalmers   I  Fredrik Bonde          I  e-post: e89_bond@etek.chalmers.se
 Tekniska   I  Gibraltargatan 82-149  I  packet: SM6UBC @ SK6YW.O.SWE.EU
 H|gskola   I  412 79 G|teborg        I     tel: +46-(0)31-20 88 76
            I  SWEDEN                 I

      ------------------------------------------------------------
```

45. Northern California Packet Association General Meeting

From: bruce@pixar.com (Bruce Perens)
Date: Thu, 11 May 95 17:24 PDT
To: netsig@tapr.org, tcp-group@ucsd.edu
Message-ID: <m0s9iWQ-000608C@mongo.pixar.com>
Rendered body type: text/plain

```
Northern California Packet Association
                    General Membership Meeting
                        May 13th at 1:00pm
                        Tandem Building 201
                      10501 Tantau, Cupertino

The meeting will be held on Foothill flea market weekend again
this year. The speaker will be Bruce Perens on "Linux for Hams".
We will also be electing a new board of directors.

If you would like to get more involved in packet please make
a point to attend.

Directions:

  Take 280 to the Wolfe road exit, that is between highways 85
    and 17/880.

  Go north on Wolfe.

  Take your first right on Pruneridge

  Turn right on Tantau.

  Tandem is the second building on your right. The entrance and
  parking is on the backside of the building.

Talk-in:

        We will use the Lockheed repeater system for talkin.
        443.775+ / 224.28- / 145.62s  all 100hz pl.

Hope to see you at the meeting following the Foothill flea market.
--
Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.hams.com/perens/LinuxForHams
```

46. Re: [NETSIG:1243] TAPR 1.1.9

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 11 May 1995 21:58:28 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199505120258.VAA07891@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

```
1.1.9 is only available as an EPROM from the office as part of the agreement
we have with the author of the code.  We hope to make it available at some
future date electronically, but that will require a conversation about doing
so with the author.  Making it available via electronic means would be
aginst the copyright agreement.

Cheers - Greg, WD5IVD


------------------------------------------------------------------------------
President -- Tucson Amateur Packet Radio Corp
------------------------------------------------------------------------------
TAPR Office (817) 383-0000  | Internet: gjones@tenet.edu
```

```
------------------------------------------------------------------------------

According to Fredrik Bonde:
>
>
>       Hi there,
>
> Where can I find the EPROM files and doc. for TAPR 1.1.9?
>
> 73 de Fredrik
>
>
>        ------------------------------------------------------------
>
>     I likhet med Mozart, Beethoven och en kille som heter Gustavsson
>       i ]motfors, har jag vigt mitt liv }t musik.
>                                                    M B Tretow
>
>  Chalmers   I  Fredrik Bonde          I  e-post: e89_bond@etek.chalmers.se
>  Tekniska   I  Gibraltargatan 82-149  I  packet: SM6UBC @ SK6YW.O.SWE.EU
>  H|gskola   I  412 79 G|teborg        I     tel: +46-(0)31-20 88 76
>             I  SWEDEN                 I
>
>        ------------------------------------------------------------
>
```

47. Re: [NETSIG:1221] Re: Would Spread Spectrum

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Fri, 12 May 95 21:42:45 PDT
To: netsig@tapr.org
Message-ID: <9505130442.AA12212@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

```
>Thanks!...  Yes, please tell me what has to be done to be added to the
>STA list.  I hope that it would be possible to get the rules modified a
>bit to include the 219 band.  I think the ideas that the ARRL had were
>basically pretty sound, but it looks to me that if spread spectrum could
>be used in that narrow of a space it would be advantageous for all the
>services.  I would think since the commercial services have priority
>that it would be worthwhile to do something to decrease any possibility
>of interference.


Hello Dave,

Sorry about the late reply.

Here's the info on the SS STA.  Send your name, address, callsign, license
expiration date, abstract of your experimentation, and a list of the goals
you hope to accomplish in your experimentation, sign it and send it to:

Robert Buaas, K6KGS
20271 Bancroft Circle
Huntington Beach, California 92646

He will add you to the list of participants in the STA.  He's required to
send a quarterly report to the FCC.

Also, look for a spread spectrum article I wrote for Harold Price's, NK6K,
Digital Communications column in QEX.  It is meant to be an eye opener
article, not a tutorial.  Hopefully it will increase some awarness to
amateur SS and experimentation, and dispell some rumors going around.

I am also starting SS Web pages, the URL is:

 http://www.sp.nps.navy.mil/ss

They are in the beginning phases and I'll be adding to them as time permits.

73,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943
NPSARC - http://www.sp.nps.navy.mil/npsarc/k6ly.html
Web Ground Station - http://gndstn.sp.nps.navy.mil
```

48. ARRL Letter: New HF Autocontrol Rules

From: WBRADFORD@delphi.com
Date: Sat, 13 May 1995 19:58:41 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HQGT2F678Y8X8VMK@delphi.com>
Rendered body type: text/plain

Here is some stuff from the latest ARRL Letter: I apologize if it's too long... (6.5k)

The ARRL Letter Volume 14, No. 8 May 3, 1995

HF auto-control digital approved

The FCC has released its Report and Order in PR Docket 94-59, concerning HF digital communications in the Amateur Radio Service.

The new rules, effective July 1, 1995, permit automatically controlled HF RTTY and data stations to communicate with one another in the following segments: 3.620 to 3.635; 7.100 to 7.105; 10.140 to 10.150; 14.095 to 14.0995; 14.1005 to 14.112; 18.105 to 18.110; 21.090 to 21.100; 24.925 to 24.930; and 28.120 to 28.189 MHz.

The new rules also permit manually controlled stations to initiate communication with automatically controlled HF RTTY and data stations. In this case the automatically controlled station may use any frequency authorized for such emissions, but may occupy a bandwidth of no more than 500 Hz.

Automatic control must cease upon notification by an FCC engineer in charge that the station is transmitting improperly or causing interference to other stations.

The FCC said it recognized the concerns of those who opposed the proposal on grounds that such operation could interfere with other amateurs, but that it believed the provisions adopted would be adequate to minimize such interference.

The FCC's notice of proposed rule making on this subject was released in June 1994, the Commission saying that its proposal was in response to petitions filed by the ARRL and the American Digital Radio Society (ADRS).

The FCC said that the propagation characteristics of the HF bands allow for long distance communications, presenting "operating demands not encountered" on the VHF and higher bands. For that reason, the FCC said, it had heretofore been necessary for a human operator to "monitor the activity on the channel being used," making automatic control unfeasible.

In 1986 the Commission had authorized automatic control of amateur digital stations on the VHF and higher bands. At that time some 50 amateurs began a study of HF automatic control under FCC Special Temporary Authority, conducted by the ARRL. The ARRL's petition was then based on the results of that study. The ADRS's petition contained an additional recommendation from amateur operators who have been experimenting for several decades with digital communication on the HF bands (a recommendation the ARRL supported).

Here are the new rules, effective July 1, 1995:

97.109 Station control.

(d) When a station is being automatically controlled, the control operator need not be at the control point. Only stations specifically designated elsewhere in this Part may be automatically controlled. Automatic control must cease upon notification by an EIC [an FCC engineer in charge] that the station is transmitting improperly or causing harmful interference to other stations. Automatic control must not be resumed without prior approval of the EIC.

(e) No station may be automatically controlled while transmitting third party communications, except a station transmitting a RTTY or data emission. All messages that are retransmitted must originate at a station that is being locally or remotely controlled.

3. A new Section 97.221 is added to Subpart C to read as follows:

97.221 Automatically controlled digital station.

(a) This rule section does not apply to an auxiliary station, a beacon station, a repeater station, an earth station, a space station, or a space telecommand station.

(b) A station may be automatically controlled while transmitting a RTTY or data emission on the 6 [meter] or shorter wavelength bands and on [see HF segments, above].

(c) A station may be automatically controlled while

transmitting a RTTY or data emission on any other frequency authorized for such emission types provided that:
(1) The station is responding to interrogation by a station under local or remote control; and
(2) No transmission from the automatically controlled station occupies a bandwidth of more than 500 Hz.

FCC proposes VE, call sign rules changes

The FCC has proposed amateur service rules changes that would affect license examinations, call signs for special event stations, and indicators of portable operation.

The FCC proposes to designate one volunteer examiner of a team as the examination session manager. The Commission also proposes to give examination credit to former licensees, and to ensure that only "bona fide" Amateur Radio clubs obtain station licenses by increasing to four persons the minimum number of members required to constitute an organization eligible for a club station license (an ARRL suggestion).

The FCC also has proposed another change suggested by the ARRL: as part of the vanity call sign program, the Commission proposes to make one-by-one call signs available to "stations operating in conjunction with short-term events of special significance to the amateur service community."

And the FCC also has proposed to allow portable indicators, such as /KP2, to be included before, after, or both before and after, the assigned call sign.

These proposals in WT Docket 95-57 were announced May 1, 1995. At presstime, no comment deadline had been announced.

LEAGUE OFFERS KIT FOR 219 TO 220 MHz REQUESTS

On April 26, 1995, US amateurs gained secondary status access to 219 to 220 MHz. Amateur operation is limited to forwarding stations in point-to-point fixed digital message forwarding systems--including intercity packet backbone networks--only.

All amateur stations are required to notify ARRL (in its FCC-designated role as contact point) at least 30 days before operating in this band, and amateur stations within 80 km of an Automated Maritime Telecommunications Systems coast station must obtain written permission from the AMTS licensee before operating.

Amateur stations between 80 and 640 km of an AMTS coast station must notify the AMTS licensee.

A Form 219A kit, available from ARRL Headquarters, includes a cover letter of explanation, a Form 219A for the required notification to ARRL (one is required for each transmitter planned), and a copy of the 219 to 220 MHz band plan.

May 1993 QST (page 9) and May 1995 QST (pages 9 and 93) have more information. <end of ARRL Letter snip>

73 Bill k7ea@wb7ulh.ut wbradford@delphi.com

49. Spread Spectrum on 219...

From: wb9mjn@uugate.wa7slg.ampr.org
Date: Sun, 14 May 95 10:26:31 mst
To: netsig@tapr.org
Message-ID: <77260@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

Hi, Spread Spectrum on the new 219 Mhz band makes allot of sense. Back when we had links on 221 Mhz we had allot of problems with interfering signals, both coherent and non-coherent. Since the 219 band is occupied by comercial users, we can expect the level of interference to be worse than on 221. Spread Spectrum would be pretty much neccassary for reliable links in this spectrum.

Its not practically feasable to do full duplex in this spectrum. Thus, the thruput of any intercity links done in traditional CSMA/Simplex fashion will be really poor. One can considere the interference to cause the channel to follow the aloha channel thruput curves. Additionally, narrow band coordination will limit the number of channels useable, without interference to commercial operations. Once a channel is identified where its "OK" to use packet, the same ol 145.01 syndrome will happen. 145.01 happened because the the channel became the "OK" channel for packet, in the early days of packet. People could point to the neighboring state, neigboring region, the ARRL , and say, "Voice guys, where do u want us to go? Somewhere else, and then during band openings, u ll have QRM on two channels?". In the end, 145.01 became useless for real time communication, however, packet or voice. Not that 145.01 is not useful, its just that the CSMA equiped/ ALOHA channel is very wasteful of the watts pumped into it. And without full duplex, single access channelisation, the primary problem is going to be interferance.

Spread Spectrum solves this. Some people might say that polarisation variation could help. TV is on horizontal polarisation, and close enuf on channels 13,12 and 11, to saturate most receivers. Operation will need to be limited to Vertical polarisation for reliability. But the commercial signals are on vertical polarisation and for the same reason. So, if u can t get away from interferenance, commercial, TV, other ham packet operation, then the system that is installed pretty much is going to have to be able to reject interferance. Spread Spectrum is the only real hope for reliable, useful transport links, in broad topigraphical coverage.

With Spread Spectrum, a simplex technigue could be arranged, where the transmitter at one site sends to a receiver at another, with a code that is for communication on the intended path, alone. Since each transmission needs to lock up each receiver , there is no thruput penalty to locking up only one receiver, versus all in range. The Spread Spectrum coding will need to be multi layered however, so that the transmitter sending is identified, as well as the intended receiver. Thus, other stations wishing to send to the transmitting station(s','s) receiver will not waste time-bandwidth doing so. This techingue, along with the rejection of interferenance, and limitation of the number of 219 stations to those doing primary transport only, might work, with reasonable thruputs. The data rate will probably be somewhere between 10 to 50 Kb tho.

I know this seems like its going against the KISS philosophy, but there ARE real problems here with doing straight narrow band technigues in this spectrum. Study ur intended paths from both ends, with receivers, for ex-tended periods before plunking down lots of cash on 219!

The Spread Spectrum idea above isn t really legal, hi. But that may change. Build a system that can be used for intended full build out usage, from the start. Don t just put on what will work for today, and then build the net-work into a dead end, with no more money to spend, and insuficient performance to attract any help.

73, Don....wb9mjn@uugate.wa7slg.ampr.org

50. Re: Spread Spectrum on 219...

From: ssampson@icon.net (Steve Sampson)
Date: Sun, 14 May 1995 13:51:11 -0500
To: netsig@tapr.org
Message-ID: <199505141859.NAA01474@ns2.icon.net>
Rendered body type: text/plain

> Spread Spectrum on the new 219 Mhz band makes a lot of sense. Back when we had links on
> 221 Mhz we had a lot of problems with interfering signals...
> It's not practically feasable to do full duplex in this spectrum.
> ...the same ol 145.01 syndrome will happen.
> Spread Spectrum solves this. ...Spread Spectrum is the only real hope for reliable,
> useful transport links, in broad topographical coverage.

The problem with SS is that it doesn't exist yet. The reason being, that there is not a
method of synchronization. I was reading an article about the Bistatic radar that the
University of Oklahoma participated in. (search for bistatic on WWW). It was errected in
Colorado near Boulder. The problem with synchronization is the same in that application
as SS. They solved the problem by having the main radar and remote receivers STALO 10 MHz
VCXO synchronized to GPS. They used a card from Navstar that provided 1 pulse per second.
The VCXO was very stable itself however. In a bistatic radar the main transmitter sweeps
around and remote passive receivers can produce a display like the main site. More important
though, they simplify producing three dimensional displays. Bistatic is also a military
concern, since the radar planes will not be survivable in the near future. They would like
to go to a high altitude drone transmitter, and many passive receivers on the ground...

...But the main point is that the GPS sync is the way to go. If the GPS engine manufacturers
could profit from a time only chip, or time sync'd highly stable VCXO

engines, we could jump on
that bandwagon. Like Ford and Plymouth however, there is better profit in
fully equipped large
models (map readout, lat and lon, 2000 waypoint, etc, etc).

I don't know how the commercial SS units work, but I assume they aren't pure
DS or FH. Which
brings up a question. Could there be a preamble which the distant receiver
syncing to this
and then switching to SS. A hybrid of NBFM and SS. The preamble could be a
2200 Hz tone that
each station phase locks a stable VCXO to. Maybe good enough in stability
for one or two
packets??
--
Steve

51. Re: [NETSIG:1249] Re: Spread Spectrum on 219...

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sun, 14 May 1995 14:00:52 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950514134630.19316B-100000@acca>
Rendered body type: text/plain

I must add my experiance to this discussion. Assuming anyone even
WANTS to try a 1 MHz SS system since the increase in Signal-to-Noise will
be very small, the techniques for sync are many and varied.

        A current military system uses Direct Sequence SS in a 100 MHz
bandwidth, and is sync by the sender while the moving party is still at
the transmitter. The code is uploaded to the mover at this point and
tested to be in synch. The mover leaves and is able to maintain synch for
about an hour.

        The Ham world doesn't care who knows the code so a well done
sudo-random code file could be used by everyone. This makes it easier to
use since once synched you can stay that way if things don't drift to
fast. I fear there would need to be a program written to re-synch nodes
and it would be time consuming.

        And last I hope the fast Single Sideband system will work. I know
that SS seems to have a place in Ham Radio. I think that place is Space
where you can spend spectrum for Signal to Noise.

73, de karl k5di

52. Re: [NETSIG:1249] Re: Spread Spectrum on 219...

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 14 May 1995 17:21:22 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199505142221.RAA09385@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Steve Sampson:
> The problem with SS is that it doesn't exist yet.

It does. Just no one has done an amateur implementation yet.
Although I predict that we might see onein the near future.

Greg, WD5IVD

53. Re: Spread Spectrum on 219...

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Mon, 15 May 1995 09:02:01 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HQIY69SO8YFAMX0L@tntech.edu>
Rendered body type: text/plain

Spread spectrum has many advantages however I do not think that it is
usable on 219 MHz for our intended application.

Spread spectrum systems are characterized by a parameter known as
processing gain. That is the ratio of the chip rate (or the code rate) to
the data rate and it is the ratio of the bandwidth of the modulated, or
spread, signal to the bandwidth of the unspread signal. In the receiver,
this same ratio describes the amount by which the interference is reduced.
For example, the GPS navigation system has a data rate of 50 bits per
second for the navigation message and it spreads it with a 1 Megachip per

second spreading code; that calculates to be a processing gain of 43 dB and the bandwidth of the signal is approximately 2 MHz. (The P-code, used by the military, etc. high-performance receivers spreads with a 10 Mc/s code for a processing gain of 53 dB.)

Applied to the 219 MHz band where the available bandwidth is 1 MHz, a 40 dB processing gain system would provide a data throughput of 100 bits per second. Although this would be equivalent to the throughput of most current packet radio networks, I don't think that this is what we really want to do in this new allocation. If we accept a lower processing gain, say 20 dB (and I wouldn't think it is even worthwhile to consider less), the data rate would be a whopping 10,000 bits per second. Not bad, but I can think of much cheaper, simpler and more readily available radios to accomplish that.

Yes, spread spectrum is neat, it has some nice interference rejection properties, and so on. But, it is a wide band system and we don't have the bandwidth in the 219 MHz band to do high-speed links with it.

Jeff, k9ja

54. UNSUBSCRIBE

From: ESTEY@SKYLER.MAVD.HONEYWELL.COM
Date: Mon, 15 May 1995 9:43:32 -0500 (CDT)
To: netsig@tapr.org
Cc: ESTEY@SKYLER.MAVD.HONEYWELL.COM
Message-ID: <950515094332.28a009ea@SKYLER.MAVD.HONEYWELL.COM>
Rendered body type: text/plain

[Empty message body]

55. email address needed (John Ackerman)

From: kingj@gdls.com (Jeff King)
Date: Mon, 15 May 95 16:06:06 EDT
To: netsig@tapr.org
Message-ID: <9505152006.AA17836@vcae05.gdls.com>
Rendered body type: text/plain

Sorry to post this to the list, but I misplaced
John Ackerman's email address. Can someone
please send it to me?

Thanks.

Jeff King   kingj@gdls.com

56. Re: [NETSIG:1254] email address needed (John Ackerman)

From: zephd@iquest.net (David Zeph)
Date: Mon, 15 May 95 17:14 EST
To: netsig@tapr.org
Message-ID: <m0sB8PT-000fS9C@dorite.iquest.net>
Rendered body type: text/plain

jra@lawdept.daytonoh.NCR.COM

73 ---> Dave, W9ZRX (zephd@iquest.net)

>Sorry to post this to the list, but I misplaced
>John Ackerman's email address. Can someone
>please send it to me?
>
>Thanks.
>
>Jeff King   kingj@gdls.com
>
>

57. [Announce] Amateur Spread Spectrum Web Pages

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Tue, 16 May 95 20:26:29 PDT
To: netsig@tapr.org, tcp-group@ucsd.edu
Message-ID: <9505170326.AA02220@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

>From the recent surge of interest on Spread Spectrum communications on the
nets, I've begun a series of Amateur Spread Spectrum Web Pages. The URL is:

 http://www.sp.nps.navy.mil/ss

The purpose of these pages is to provide information on and encourage
experimentation with Amateur Spread Spectrum Communications. Principally
these pages will be Amateur Radio oriented. These pages will provide the
current Rules and Regulations governing Amateur Spread Spectrum. They also
include information on and how to join a Special Temporary Authorization
granted by the FCC that waives certain rules in Part 97 of the Rules and
Regulations to allow further experimentation.

     - Present Rules and Regulations on Amateur Spread Spectrum Communications
     - Information on Special Temporary Authorization and waiver of Rules
and Regulations
     - Biblography of Spread Spectrum Communications
     - Other Web sites of interest on Spread Spectrum
     - Other Web sites of interest on Wireless Networking

Enjoy,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943
 - - - - -
K6LY NPSARC - http://www.sp.nps.navy.mil/npsarc/k6ly.html
Web Ground Station - http://gndstn.sp.nps.navy.mil
Amateur Spread Spectrum - http://www.sp.nps.navy.mil/ss

58. Use for 219 MHz

From: ssampson@icon.net (Steve Sampson)
Date: Wed, 17 May 1995 01:01:51 -0500
To: netsig@tapr.org
Message-ID: <199505170610.BAA21647@ns2.icon.net>
Rendered body type: text/plain

Well it looks like everyone has decided 219 isn't worth much besides another
145.01 packet carrier. Looks like the ARRL is wasting time and money on
this bogus
band. Maybe make a good APRS window... Since SS over 1 MHz requires low data
rates for
the processing gain quoted earlier - I was listening to my SuperMorse this
evening and the thought came to me - Hey! That's it - a low data rate just
ready for SS on 219. Hee. And
the old farts (any member who elects the same old dweebs) can XOR their CW
with the spreading code, or even RTTY at 60 WPM - Hey! Can you imagine
frequency hopping on every Dit/Dah...

Guess it's time for another Sam Adams brewski...
--
Steve

59. Re: [NETSIG:1257] Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Thu, 18 May 95 14:59:55 PDT
To: netsig@tapr.org
Message-ID: <9505181459.ZM16834@hanko>
Rendered body type: text/plain

On May 17, 1:10am, Steve Sampson wrote:
> Subject: [NETSIG:1257] Use for 219 MHz
> Well it looks like everyone has decided 219 isn't worth much besides another
> 145.01 packet carrier. Looks like the ARRL is wasting time and money on
> this bogus
> band. Maybe make a good APRS window... Since SS over 1 MHz requires low data
> rates for
> the processing gain quoted earlier - I was listening to my SuperMorse this
> evening and the thought came to me - Hey! That's it - a low data rate just
> ready for SS on 219. Hee. And
> the old farts (any member who elects the same old dweebs) can XOR their CW
> with the spreading code, or even RTTY at 60 WPM - Hey! Can you imagine
> frequency hopping on every Dit/Dah...
>
> Guess it's time for another Sam Adams brewski...

Perhaps it is, or perhaps not ...

Yes, 219 is not going to be a magic bullet ... nor is spread spectrum
nor is "... another 145.01 ..." whatever that means. In this part of
the country, 145.01 is a nice quiet frequency, available for experimentation
(but I don't think that is what you meant).

My own opinion: to make effective use of the new 219 freqs we should
suggest that people use existing off-the-shelf 9.6k and 19.2k gear,
and get the backbones built and operational as quickly as possible,
before these frequencies are (again) taken away.

"Use it or lose it."

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

60. Re: [NETSIG:1258] Re: Use for 219 MHz

From: California Wireless Incorporated <cwi@rahul.net>
Date: Fri, 19 May 1995 00:13:48 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <199505190713.AA03587@bolero.rahul.net>
Rendered body type: text/plain

Hank W0RLI writes:

>Yes, 219 is not going to be a magic bullet ... nor is spread spectrum
...
>My own opinion: to make effective use of the new 219 freqs we should
>suggest that people use existing off-the-shelf 9.6k and 19.2k gear,
>and get the backbones built and operational as quickly as possible,
>before these frequencies are (again) taken away.
>
>"Use it or lose it."
>
>   ... Hank

As one of the commenters in this proceeding (indeed, some of my comments
were quoted in the FCC R&O), I think it would be helpful if I provided some
background material.

First, this band segment was originally conceived to compensate high-speed
digital communications needs that were taken away when 220-222 was reallocated.

Here in Northern California, _ALL_ 100 kc channels were removed by that
ever-frequency-hogging repeater group, NARCC. My impassioned plea to leave
at least ONE channel fell on deaf ears (this is no wonder, of course, because
the vast majority of NARCC members are repeater owners).

The ARRL plan was to help us get our 100 kc wide digital signals back on the
air. And, through hard work, the ARRL did succeed, and now we have 1 Mc to
use for digital purposes, on a secondary basis, coordinated through the ARRL.

The _intended_ use of 219-220 was for intercity backbone links using the
WA4DSY 56kb/s modems.

Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
56kb/s modems. They are bandwidth efficient, available, and easy to set up
and use.

-Mike K3MC
mike@wireless.com   (Internet)
k3mc@k3mc.#nocal.ca.usa (Ham Packet Radio Mailbox Forwarding System)

61. Re: [NETSIG:1259] Re: Use for 219 MHz

From: Bob Wilkins <rwilkins@ccnet.com>
Date: Fri, 19 May 1995 06:11:28 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9505190426.A26581-0100000@ccnet3>
Rendered body type: text/plain

On Fri, 19 May 1995, California Wireless Incorporated wrote:

> Here in Northern California, _ALL_ 100 kc channels were removed by that
> ever-frequency-hogging repeater group, NARCC. My impassioned plea to leave
> at least ONE channel fell on deaf ears (this is no wonder, of course, because
> the vast majority of NARCC members are repeater owners).

Gosh Mike, I attended and partisipated in all six 220 Band Planning
meetings held over a six month period here in northern california. I must
have been sitting way in the back of the room when you made your proposal.
Packet and digital users were well represented and attended every meeting.

You may want to refer to your notes...at that time, and to this day, I
have yet to see ANY 56kb/s activity for packet bbs forwarding in your
area on any band.   There is spectrum available now.

That vast majority of Narcc repeater owners gave up 320 kHz of coordinated
active repeater spectrum. To do this a majority of those folks had to
change frequency and share with closer neighbors. That same frequency
hogging repeater coordinating group also gave up all of its auxiliary
linking frequencies and had to recoordinate those hundred uses on higher
auxiliary frequency bands. You and I both know the digital spectrum users
were well accomodated, actually getting more spectrum than our prior
locally accepted bandplans.

It is my understanding that the Ncpa digital coordinators accomodated the
proposed 56kb/s service on the higher bands. There are even higher speed
300+kb/s tcp/ip networks now in local service at 905 MHz.

> The ARRL plan was to help us get our 100 kc wide digital signals back on the
> air. And, through hard work, the ARRL did succeed, and now we have 1 Mc to
> use for digital purposes, on a secondary basis, coordinated through the ARRL.

Hopefully you will use the experiance and knowledge of your local
coordinators, allowing the ARRL to maintain a database of primary and
secondary uses.

> The _intended_ use of 219-220 was for intercity backbone links using the
> WA4DSY 56kb/s modems.

Why not set up local standards that meet the conditions of the enabling
fcc rules. Other vendors as well as amateur systems should be allowed to
partisipate with developement work.

> Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
> 56kb/s modems. They are bandwidth efficient, available, and easy to set up
> and use.

Nobody said this should be easy. If it were any easier, those ten channels
would be gobbled up in a day by folks like me who want higher speed _local_
service.

Bob   n6fri member of that ever frequency hogging repeater group narcc
              member of that ever frequency eficient digital group ncpa

     Bob Wilkins   work   bwilkins@cave.org
 Berkeley, California   home   rwilkins@ccnet.com
     94701-0710   play   n6fri@n6eeg.#nocal.ca.usa.noam

62. Re: Use for 219 MHz

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Fri, 19 May 1995 08:52:20 -0500 (CDT)
To: netsig@tapr.org
Cc: jra1854@tntech.edu
Message-ID: <01HQOK7O32BSFAOFYA@tntech.edu>
Rendered body type: text/plain

Mike, K3MC writes:
> The _intended_ use of 219-220 was for intercity backbone links using the
> WA4DSY 56kb/s modems.
>
> Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
> 56kb/s modems. They are bandwidth efficient, available, and easy to set up
> and use.

That solution may be what is needed in your area but there is no need to
force it on the rest of the country. The modulation type and bandplan
should be determined on a regional basis per local capabilities, resources
and needs. Given that the band is reserved for backbone links this should

not be difficult to coordinate. In my area (middle tennessee), where the
population density is significantly less than california, we have neither
the same problems nor the same resources as you do. We will be doing well
to get a 9600 b/s full-duplex backbone link running across the state.

I disagree with the statement that the 56 kb/s systems are easy to set up.
It takes time, money and talent to get one working. (Of course, the
second, third, etc. are much easier since most of the debugging tricks have
been learned...but one still has to assemble the kit, find a transverter,
build a chassis and wire everything together.) They are nowhere near "off
the shelf" technology. I'm not necessarily recommending it, but despite
their shortcomings the Kantronics D4-10 radios are a lot easier to get
running when given limited resources.

Jeff, k9ja

63. Re: [NETSIG:1259] Re: Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Fri, 19 May 95 08:43:42 PDT
To: netsig@tapr.org
Message-ID: <9505190843.ZM18694@hanko>
Rendered body type: text/plain

On May 19, 2:27am, California Wireless Incorporated wrote:
> Subject: [NETSIG:1259] Re: Use for 219 MHz
> Hank W0RLI writes:
>
> >Yes, 219 is not going to be a magic bullet ... nor is spread spectrum
> ..
> >My own opinion: to make effective use of the new 219 freqs we should
> >suggest that people use existing off-the-shelf 9.6k and 19.2k gear,
> >and get the backbones built and operational as quickly as possible,
> >before these frequencies are (again) taken away.
> >
> >"Use it or lose it."
> >
> >   ... Hank
>
> As one of the commenters in this proceeding (indeed, some of my comments
> were quoted in the FCC R&O), I think it would be helpful if I provided some
> background material.
>
> First, this band segment was originally conceived to compensate high-speed
> digital communications needs that were taken away when 220-222 was
reallocated.
>
> Here in Northern California, _ALL_ 100 kc channels were removed by that
> ever-frequency-hogging repeater group, NARCC. My impassioned plea to leave
> at least ONE channel fell on deaf ears (this is no wonder, of course, because
> the vast majority of NARCC members are repeater owners).
>
> The ARRL plan was to help us get our 100 kc wide digital signals back on the
> air. And, through hard work, the ARRL did succeed, and now we have 1 Mc to
> use for digital purposes, on a secondary basis, coordinated through the ARRL.
>
> The _intended_ use of 219-220 was for intercity backbone links using the
> WA4DSY 56kb/s modems.
>
> Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
> 56kb/s modems. They are bandwidth efficient, available, and easy to set up
> and use.

And not yet available in a plug-and-play commercial product, to the best
of my knowledge. For many parts of the country, "off the shelf", and
"plug and play" are requirements. Dividing the band into 20 khz 9600 baud
channels can provide good throughput, while allowing for use of the frequencies
in areas that do not have the resources to "roll their own." Restricting
the use of the band to a specific "not quite yet commercially available"
technology will result in the non-use (and I presume eventual loss) of
the frequencies.

   ... Hank

>
> -Mike K3MC
> mike@wireless.com   (Internet)
> k3mc@k3mc.#nocal.ca.usa   (Ham Packet Radio Mailbox Forwarding System)

>-- End of excerpt from California Wireless Incorporated

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

64. Re: [NETSIG:1259] Re: Use for 219 MHz

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 19 May 1995 12:53:40 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199505191753.MAA05526@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to California Wireless Incorporated:
> Hank W0RLI writes:
> >Yes, 219 is not going to be a magic bullet ... nor is spread spectrum
> ..
> >My own opinion: to make effective use of the new 219 freqs we should
> >suggest that people use existing off-the-shelf 9.6k and 19.2k gear,
> >and get the backbones built and operational as quickly as possible,
> >before these frequencies are (again) taken away.
> >
> >"Use it or lose it."
> >
> > ... Hank
>
> The _intended_ use of 219-220 was for intercity backbone links using the
> WA4DSY 56kb/s modems.
>
> -Mike K3MC

Mike, I think both you and Hank have a point here.

The problem I see with the issue is that it would great to have intercity links on this freq, but the folks doing those things will continue to do them where they have equipment setup and can get equipment easily found. This band does not easily lend itself to doing things on it....unless someone has no alternate freqs to use - as you have pointed out Mike.

While band space is a problem in Calf and in other areas, band space in most other places is not the real problem. The real problem is doing all the physical things required (i.e sites for those systems). What freq is used is most often determined by what the rest of the network was already using or what radios are available. Radio availabilty is the largest determining factor in this equation.

I don't believe that just becuase the band is now available that new groups will be formed to implement networking on it...a few groups will take advantage of it, but I have my doubts about how many we will actually see, espically since DSY modems have been around for a while now and not that many people are using them.

Also, I believe that the amount of overhead in getting access to freq will deter many from getting on the band. For folks that really need the space, they will go through all the necessary twists and turns to get access. Amateurs are use to the wide open plains and most do not apperciate what we have in dollars and freedom for RF access. The amount of paperwork required for band usage is fairly low for commercial operations, but as compared to amateur standards -- it looks pretty complicated (I hope I made my point here -- although it could have been done a little clearer) But again if a ham can do it on a freq that requires no or much less paperwork and can find more abundent technology to work with -- they will take the path of least resistance.

These issues limit both camps of thought.

I had also heard a rurmor at Dayton that there had been a peteition for reconsideration on the issue from the commercial segment. Also, I heard another rurmor that several of the primary people that had t be consulted were just going to say NO to any requests for secondary access in their area by amateurs. Have you heard anything on this ?

Cheers - Greg, WD5IVD

65. Re: [NETSIG:1262] Re: Use for 219 MHz

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 19 May 1995 10:55:38 -0700
To: netsig@tapr.org
Message-ID: <199505191756.MAA06929@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Much snipped
>
>And not yet available in a plug-and-play commercial product, to the best
>of my knowledge. For many parts of the country, "off the shelf", and
>"plug and play" are requirements. Dividing the band into 20 khz 9600 baud
>channels can provide good throughput, while allowing for use of the frequencies
>in areas that do not have the resources to "roll their own." Restricting
>the use of the band to a specific "not quite yet commercially available"
>technology will result in the non-use (and I presume eventual loss) of
>the frequencies.
>
>   ... Hank
>
The "not quite yet commerically available technology" may never become
commerically available if the band is cluttered with slow-speed links.

73 de Jack

---

66. 220 Radios for WA4DSY Modems

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Fri, 19 May 95 11:24:36 PDT
To: netsig@tapr.org
Message-ID: <9505191824.AA19625@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

Hey Mike,

>The _intended_ use of 219-220 was for intercity backbone links using the
>WA4DSY 56kb/s modems.
>
>Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
>56kb/s modems. They are bandwidth efficient, available, and easy to set up
>and use.

What radios are you using to do 220 Mhz with the WA4DSY modems?

Thanks,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943
 - - - - -
K6LY NPSARC - http://www.sp.nps.navy.mil/npsarc/k6ly.html
Web Ground Station - http://gndstn.sp.nps.navy.mil
Amateur Spread Spectrum - http://www.sp.nps.navy.mil/ss

---

67. Re: [NETSIG:1264] Re: Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Fri, 19 May 95 11:31:45 PDT
To: netsig@tapr.org
Message-ID: <9505191131.ZM19078@hanko>
Rendered body type: text/plain

On May 19, 1:10pm, Jack Taylor wrote:
> Subject: [NETSIG:1264] Re: Use for 219 MHz
>   Much snipped
> >
> >And not yet available in a plug-and-play commercial product, to the best
> >of my knowledge. For many parts of the country, "off the shelf", and
> >"plug and play" are requirements. Dividing the band into 20 khz 9600 baud
> >channels can provide good throughput, while allowing for use of the
frequencies
> >in areas that do not have the resources to "roll their own." Restricting
> >the use of the band to a specific "not quite yet commercially available"
> >technology will result in the non-use (and I presume eventual loss) of
> >the frequencies.
> >
> >   ... Hank
> >
> The "not quite yet commerically available technology" may never become

> commerically available if the band is cluttered with slow-speed links.
>
> 73 de Jack

What do you suggest? That we should NOT build network with 9.6 kbps
or 19.2 kbps links? That is not possible to upgrade existing links
to higher speeds? What actions can we take to help make higher speed
technology BECOME commercially available?

I've been asking at least one tnc manufacturer (Kantronics) about
the possibility of their marketing such devices. Specifically
56 kbps or 64 kbps modems for the Data Engine. Been asking them
the same question for 'awhile' ... several years. The answer is
what one would expect: it is a better business decision to concentrate
on what people will actually buy - and right now that is 1200 and
9600 bps gear. If we could show that there is pent up demand for
higher speed modems, they would appear on the market.

Yes, we have the typical chicken/egg problem.

So I post the following challange: What can "we" do to help move
the technology into the commercial market? How many 56 kbps systems
could I sell at $250, at $500, at $1000 (per channel, radio/modem/tnc) ?

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

68. RE: [NETSIG:1259] Re: Use for 219 MHz

From: "James T. Fortney" <fortney@lcsipdp.litton.com>
Date: Fri, 19 May 95 12:07:08 PDT
To: netsig@tapr.org
Message-ID: <Chameleon.4.01.950519121527.fortney@FORTNEY.LITTON.COM>
Rendered body type: text/plain

I second everything Mike has said about keeping the band for higher speed implementations.

>
>As one of the commenters in this proceeding (indeed, some of my comments
>were quoted in the FCC R&O), I think it would be helpful if I provided some
>background material.
>
>First, this band segment was originally conceived to compensate high-speed
>digital communications needs that were taken away when 220-222 was reallocated.
>
>Here in Northern California, _ALL_ 100 kc channels were removed by that
>ever-frequency-hogging repeater group, NARCC. My impassioned plea to leave
>at least ONE channel fell on deaf ears (this is no wonder, of course, because
>the vast majority of NARCC members are repeater owners).
>
>The ARRL plan was to help us get our 100 kc wide digital signals back on the
>air. And, through hard work, the ARRL did succeed, and now we have 1 Mc to
>use for digital purposes, on a secondary basis, coordinated through the ARRL.
>
>The _intended_ use of 219-220 was for intercity backbone links using the
>WA4DSY 56kb/s modems.
>
>Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
>56kb/s modems. They are bandwidth efficient, available, and easy to set up
>and use.
>
>-Mike K3MC
>mike@wireless.com   (Internet)
>k3mc@k3mc.#nocal.ca.usa   (Ham Packet Radio Mailbox Forwarding System)

The 220SMA in Southern California is set-up to provide coordination support to individuals
who want to make use of the 219-220MHz Band.

Jim Fortney, K6IYK
President, 220SMA
K6IYK@K6IYK.#SOCA.CA.USA.NOAM
fortneyj@ix.netcom.com

69. Basic Network Infrastructure

From: ssampson@icon.net (Steven R. Sampson)
Date: Fri, 19 May 1995 15:05:51 -0500
To: netsig@tapr.org
Message-ID: <199505192014.PAA11368@ns2.icon.net>
Rendered body type: text/plain

Having worked with both wire and wireless (sorry I couldn't resist the new marketing term)
in networking, I'd like to make a few comments. One of the failures in the two computer
networks where I have been employed, was that they consisted of one leg. The bad thing
about computers, is that once the cable is layed, everyone wants to hook their computer to
the magical server. It takes years to realize that you have to tear down the system and rebuild
with cell servers. Each cell operates with its own server. The last company I worked for had
a more difficult problem, because the infrastructure had to carry Novell, Microsoft, and TCP/IP.
I don't know if you've seen Novell 3.11 with NFS, but it isn't pretty when it crashes. It's
this mesh of software on top of the infrastructure that really identifies the problem. Sure,
you could say: if I had a 56 kbps statewide network, I could live with that problem! But the
basic failure mechanism was the one-leg network, not the NOS's. I used to marvel at the
concentrator load light bar being in the red all the time, and the network still operating.

Now I realize that the first rule of hamming is not to take anything too seriously, as that
only makes you look like an idiot at the swap meet; but, as I tune my radio across the band,
all I really find is one-leg solutions. There are node bridges that isolate most of the
traffic on each leg from another, but at 1.2 kbps any bridged traffic quickly consumes all the
functional capacity.

The proper thing all along was the cell structure. We had a lot of fun with half-duplex over
radio, but it's time to graduate. I see the need for a basic cell that is affordable. That
usually means 9.6 kbps unless you live in a Fortune 500 community. Since half-duplex only works
over wire (and not too well there either), then the first solution is a full-duplex repeater.
Once the cell members can hear everyone else, they can then stop jamming each other. Now
9.6 kbps is not the speed demon we'd like to think it is, but that and full-duplex should get
us to the first base. We certainly can't stand 1.2 kbps any longer as a serious interest. I
like to read about Spread Spectrum, but when I really think about it, I find it offers mostly
another half-duplex solution. I looked in all my magazines and didn't find a cell based
solution with a repeater. No, everyone was on the same center frequency and collisions are just
happening faster. Theoretically they could have seperate PN seed codes and share the same band,
but that's not what they are selling today. They are selling one-leg solutions.

So that's my contribution for the day. Forget about inter-city links for a few years, spend
some time on the cell infrastructure. The magazine and newsletter writers are all concentrating
on has-been technology. We need to start seeing affordable working solutions (prices in line
with voice repeaters) that develop full-duplex. There isn't that many people who have a need
to go outside the cell, and can wait for interlinks to develop. If there should become 56 kbps
links on 219, so be it. I'd rather think they will become wire based (internet) due to the
cheap cost of 14.4 kbps full-duplex networking. I'd like to see 56 kbps

become the new cell
speed, and that would be our second base. The real underlying problem today
is, we only offer
one-leg solutions that combine city cells and interlinks, where we really
need a seperate
backbone leg for that. The slow speed (1.2 kbps) only hides the problem.
--
Steve

70. Re: [NETSIG:1259] Re: Use for 219 MHz

From: bruce@pixar.com (Bruce Perens)
Date: Fri, 19 May 95 15:32 PDT
To: netsig@tapr.org, netsig@tapr.org
Cc: cwi@rahul.net
Message-ID: <m0sCaaP-0005xIC@mongo.pixar.com>
Rendered body type: text/plain

From: California Wireless Incorporated <cwi@rahul.net>
> Here in Northern California, _ALL_ 100 kc channels were removed by that
> ever-frequency-hogging repeater group, NARCC. My impassioned plea to leave
> at least ONE channel fell on deaf ears (this is no wonder, of course, because
> the vast majority of NARCC members are repeater owners).

Mike,

I recently joined NARCC's executive board. As you know, I'm a board
member and candidate for president of Northern California Packet
Association as well. Obviously, I intend for NARCC to become more
sympathetic toward packet. If you have specific complaints about NARCC
or NCPA that you'd like to see addressed, please take them up with me
via e-mail.

        Thanks

        Bruce Perens
--
Attention Ham Radio Operators: For information on "Linux for Hams", read
the World Wide Web page http://www.hams.com/perens/LinuxForHams

71. Re: [NETSIG:1266] Re: Use for 219 MHz

From: "Brian A. Lantz" <brian@lantz.com>
Date: Fri, 19 May 1995 18:41:19 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9505191803.J6356-0100000@lantz.com>
Rendered body type: text/plain

On Fri, 19 May 1995, Hank Oredson wrote:

> I've been asking at least one tnc manufacturer (Kantronics) about
> the possibility of their marketing such devices. Specifically
> 56 kbps or 64 kbps modems for the Data Engine. Been asking them
> the same question for 'awhile' ... several years. The answer is
> what one would expect: it is a better business decision to concentrate
> on what people will actually buy - and right now that is 1200 and
> 9600 bps gear. If we could show that there is pent up demand for
> higher speed modems, they would appear on the market.

The PacComm Spirit2 (formerly Sprint2) will handle 57.6K with the 20Mhz
parts in it. Available for some time.

The 'problem' is the radios. Getting ones that will handle the bandwidth,
that are available and affordable.....

Brian A. Lantz   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

72. Re: [NETSIG:1261] Re: Use for 219 MHz

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Fri, 19 May 95 18:26:20 UTC
To: netsig@tapr.org
Message-ID: <3918@paccomm.com>
Rendered body type: text/plain

Subtitle: Ease of 56kb links.
regarding Jeff, K9JA's comments about the difficulty in assembling the
kit, find a transverter, build a chassis, wire everything together....

Expect to see an assembled and tested WA4DSY design (Grapes) modem in the
ham marketplace at a reasonable price. The radio (transverter) will be
harder, but work is going on in that area also.

I can't say more at this time. Stay tuned.

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

73. Re: [NETSIG:1266] Re: Use for 219 MHz

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Fri, 19 May 95 18:33:31 UTC
To: netsig@tapr.org
Message-ID: <3919@paccomm.com>
Rendered body type: text/plain

re: Hank Oredson & bugging Kantronics for several years, etc.

Try working with people that like to listen. I'm not shy, I mean my company.
We have off-the-shelf TNC/Modems for 9.6 up through 56kb, and will soon
offer the DSY model for those who care for its design.

We make a G3RUH modem card which fits the Data Engine and the Gracilis
PackeTen (which we are setting up to manufacture), and so there will
likely be a DSY modem which will interface to the Data Engine (if it will
push bits fast enough?)

We're not out in front in providing RF gear, but we're looking at alternative.

I don't think it will be so hard to run faster on 220 in a year or so.

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

74. Re: [NETSIG:1270] Re: Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Fri, 19 May 95 15:49:40 PDT
To: netsig@tapr.org
Message-ID: <9505191549.ZM19538@hanko>
Rendered body type: text/plain

On May 19, 5:43pm, Brian A. Lantz wrote:
> Subject: [NETSIG:1270] Re: Use for 219 MHz
> On Fri, 19 May 1995, Hank Oredson wrote:
>
> > I've been asking at least one tnc manufacturer (Kantronics) about
> > the possibility of their marketing such devices. Specifically
> > 56 kbps or 64 kbps modems for the Data Engine. Been asking them
> > the same question for 'awhile' ... several years. The answer is
> > what one would expect: it is a better business decision to concentrate
> > on what people will actually buy - and right now that is 1200 and
> > 9600 bps gear. If we could show that there is pent up demand for
> > higher speed modems, they would appear on the market.
>
> The PacComm Spirit2 (formerly Sprint2) will handle 57.6K with the 20Mhz
> parts in it. Available for some time.
>
> The 'problem' is the radios. Getting ones that will handle the bandwidth,
> that are available and affordable.....
>

Can I plug a ks-900 or d4-10 onto this tnc?

(um, and will it work if I do ... ?)

i.e. if I bought two of these tncs, and two ks-900s, and the appropriate
power supply/feedline/antenna/etc. and I up and running at 56 kbps?

How does my g8bpq node or JNOS talk to them? RS-232 port?

Will they run NET/ROM .. TheNet ...

Do they talk KISS? Multi-drop KISS?

i.e. tell us a bit more about them ... is this really "plug and play" ?

I've not seen any ads for these in the ham radio magazines - perhaps
have simply missed them. What do they cost?

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

75. Re: [NETSIG:1262] Re: Use for 219 MHz

From: n6kuy@xyzzy.csci.csusb.edu (Mike Westfall)
Date: Fri, 19 May 1995 18:59:09 -0700 (PDT)
To: netsig%tapr.org@silicon.csci.csusb.edu
Message-ID: <m0sCdot-0003nKC@xyzzy.csci.csusb.edu>
Rendered body type: text/plain

> > Therefore, I am requesting that _ALL_ use of 219-220 be limited to WA4DSY
> > 56kb/s modems. They are bandwidth efficient, available, and easy to set up
> > and use.
>
> And not yet available in a plug-and-play commercial product, to the best
> of my knowledge. For many parts of the country, "off the shelf", and
> "plug and play" are requirements. Dividing the band into 20 khz 9600 baud
> channels can provide good throughput, while allowing for use of the frequencies
> in areas that do not have the resources to "roll their own."

I was under the impression the band was only for point-to-point, 100khz
channels. Maybe that notion came from some local discussion on how the new
band would be utilized, though....

Somebody clear me up on it, please...

```
--------------------------------------------------------------------------------
 73 de Mike,      ax.25net:    N6KUY@W6JBT.#SOCA.CA.USA.NOAM
                   amprnet:    n6kuy@n6kuy.ampr.org [44.18.0.49]
                  internet:    mwestfal@silicon.csci.csusb.edu
 Linux: the Gates of Hell shall not prevail.
 GCS/M -d+ p+ c++ l u++ e+(*) m++(-) s/+ !n-(---) h-- !f g+ w+ t++ r-(--) y+
--------------------------------------------------------------------------------
```

76. Re: [NETSIG:1273] Re: Use for 219 MHz

From: shawnpat@sierra.net (Shawn Skinner)
Date: Fri, 19 May 1995 22:21:02 -0700
To: netsig@tapr.org, hanko@wv.mentorg.com (Hank Oredson)
Message-ID: <199505200521.AA18877@diamond.sierra.net>
Rendered body type: text/plain

Hi Hank, Thought i'd answer your Q's directly

>
>Can I plug a ks-900 or d4-10 onto this tnc?
>(um, and will it work if I do ... ?)

Yep, since both the KS-900 and D4-10 are the optimum type radio for
high speed, the spirit's are made for them.

>i.e. if I bought two of these tncs, and two ks-900s, and the appropriate
>power supply/feedline/antenna/etc. and I up and running at 56 kbps?

With the proper alteration to the radios/filters/bandwidth.

>How does my g8bpq node or JNOS talk to them? RS-232 port?

With the X1J4 node ware, which allows Kiss on the RS-232 as
an option. (Forget the BPQ as the X1J is better) OR use the
TNC EPROM in the stock TNC spirit and run BPQ or JNOS just
like your existing TNC (change the params of course).

>Will they run NET/ROM .. TheNet ...
>
>Do they talk KISS? Multi-drop KISS?

Not sure about Multi-drop Kiss as I don't know that.

>i.e. tell us a bit more about them ... is this really "plug and play" ?
>
>I've not seen any ads for these in the ham radio magazines - perhaps
>have simply missed them. What do they cost?
>
>   ... Hank
>

spirit-2 (formerly sprint-2)
TNC standard $225
Satelite model $235
Node (10 Mhz cpu) $225
Backbone (20 Mhz cpu) $260

Choice of speeds at order time: 4k8, 9k6, 19k2, 38k4, 57k6
select 2 speeds in the node models or use stock speeds:
Node 9k6, 38.4
Backbone 38k4, 57k6

Uses G3RUH modem with plug-in filters for the different
speeds. Connect with existing nodes using new co-ax lan
adapter to old nodes TTL port (TNC-2 compatable).

For more info 800-486-7388, PacComm.

73 de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner

77. Re: [NETSIG:1268] Basic Network Infrastructure

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Sat, 20 May 95 09:48:43 UTC
To: netsig@tapr.org
Message-ID: <3939@paccomm.com>
Rendered body type: text/plain

Re: Steve Sampson's comments about cells vs networks.

The 219-220 proposal has been on the burner for a couple of years, and
fortunately has actually come to pass. In trying to anticipate the
usage of that band so we can be prepared with the proper products, I've
given considerable thought to the alternatives. I'm not a technical
guru, but I'm not a marketing type either. (You have to do it all in
a small business.)

The exciting thing about the new band was (from the beginning) the
allocation to wider channels for data use. Not to fling any arrows at
other types of users, but some frequencies available for modestly wide-
band data without having to compete with other amateur spectrum users
really qualifies this band as NEW.

I personally have no problem with using wire/fiber (internet) for linking
various localities. I'll enter no discussions about what is and what isn't
ham radio. The hobby has changed a lot since I got my license in 1954, and
I've kept up with those changes. I don't think the changes will stop and I
don't intend to stop making progress.

The following is not specifically meant to 'push' a PacComm product, which
I think is improper to do on this forum. However, explaining the design
ideas behind the SPIRIT-2 (ex SPRINT-2 -> thanks, U.S. Sprint) will
illustrate how we're trying to support this new band and some

movement away from 1200 baud AFSK.

There will always be technical discussions which center on more capacity, more horsepower etc., and there is the reality of what hams in the trenches will purchase/pay for vs what the ideal discussions center on. I think we all know that low cost implementations of technology will propagate faster than expensive ones, even though they are less ideal...

First, let me shortstop the frequent query, "what is the use of having a 56kb TNC - there are no radios to use with it." Simply put, one has to come first, and due to our efforts, there is a low cost packet modem which will support 56kb in a 100 KHz channel. Now we need to find a radio. We know how to make TNCs and have made a nice one. Looks like we're going to have to learn how to make radios too, so the job will get done. At least we're halfway there. There was no sense to avoid making the 56kb TNC while waiting for a radio to appear - that's called a standoff.

Back to 220. If those frequencies don't get used for a national network due to whatever reasons (hard to coordinate, local/regional disagreements on usage, endless technical discussions on what the ideal mode is, etc.) then Steve Sampson's ideas are right on target. Taking cues from the packet satellites, we can have some 56kb (or 64 kb if you want to follow the European ideas) broadcast 'downlinks' on 220 and a large number of 9k6 uplinks on a variety of frequencies - 220, 145, 440 etc. Then we need only a few 56kb transmitters, and many more 56kb receivers (easier) and 9600 gear is already reasonably available.

So to the SPIRIT-2: It will do any speed from 1200 to 56kb (64 kb if you change one crystal). (That's not 1200 AFSK, its rather useless 1200 DFM). The G3RUH modem generates a signal with an occupied bandwidth as follows: 9k6 = 15KHz 19k2 = 30 KHz, 38k4 = 60 KHz, 57k6 = 90 KHz, 64k = 100 KHz. Those numbers per James Miller, G3RUH. OK, lets say those are on the tight side. Well, 38.4 would easily fit in 100 KHz. Or 64k would fit in a 100 KHz channel if neighboring channels were not modulating the total bandwidth. Look at TV channels. Each channel fits in its own 6.5 MHz - right? Well how come it is extremely unusual for two sequential channels (5 & 6 for instance) to be allocated in the same area? Same could apply to 220, especially if the fast downlink, slower uplink scheme is implemented.

TNC cost? Right now, from $225 to $260 (may go up slightly soon).

Want to use the WA4DSY (Grapes) MSK solution? It is spec'ed at 70 KHz occupied bandwidth for 56k data rate, and that extrapolates to under 80 KHz at 64kb. Certainly looks ideal, especially if you draw a diagram showing all these 56kb channels operating side by side in the same area. That is probably just what is needed (and more) in So. Cal, but not so much elsewhere. Well I can't officially announce anything yet, and I'm probably saying more than I should, but the DSY modem is going to be available as a ready built, modernized design. Plug and play, as they say (radio assumed!) It can be driven at full speed by a SPIRIT-2 PAD or other approaches. Like the PI card approach? Remember that PacComm now manufactures and markets Gracilis products. The PackeTwin is a dual channel HDLC card with DMA and drivers exist for NOS, etc. (And those of you that follow PacComm know that we 're always updating things....)

Finally (don't take that seriously) the SPIRIT-2 is the only TNC we know of that can run full duplex at two different baud rates. The Satellite model is configured to do 9600/9600, or flip a switch and receive at 38.4 while transmitting at 9.6. Plug in a different modem filter, set a jumper and you have an off-the-shelf rx at 56, tx at 9600 TNC to implement the
'broadcast' scenario on 220.

So, we've built a TNC with a future, but we need radios. Our design studies call for the following. I don't mind sharing this, because if someone 'out there' gets it built before we do, the sooner we can begin interfacing SPIRIT-2 TNCs to them.
We need a crystal controlled radio (fast switching, lower cost) for 219-20 that can be built to operate up to 100 KHz bandwidth, clean digital design, etc. Should be able to be modulated by a DFM (K9NG/G3RUH/MX589 etc.) signal and thus be a 'radio.' Should also be able to be configured as a transverter to/from 28 MHz to work with new and old WA4DSY design modems. Also should be configurable for a narrower bandwidth, for optimum 9600 or 19200 work. Finally, should either have separate tx and rx boards, or if combined, be able to interface with a second RX board to implement the dual data rate operations. Oh, should be under $200 for a 5 watt model, and under $300 for a 30 watt model.

Finally (really) I entertain comments about this type of posting. As I
see it, we are all hams trying to improve our digital lot. I also run
a business in this technical area. Therefore I have production resources
which can support the availability of the kind of equipment we all want,
but my technical design resources are dwarfed by the combined (and in
many cases, individual) skills represented on this forum. We need ideas
and feedback to provide the equipment hams need, and I need to provide some
information in order to generate feedback. If I get bashed for this
posting, I'll desist. Just had to respond to Hank Oredson's comment
that he never saw an advertisement for the SPRINT. I'm going to have
to examine my advertising strategy - we've spent the price of a new
-- well, we spent a lot!

73, Gwyn

_ _
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

78. Re: [NETSIG:1275] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Sat, 20 May 95 12:36:17 EDT
To: netsig@tapr.org
Message-ID: <15021573.1ae6@ram.net>
Rendered body type: text/plain

Hank,

Multidrop KISS?

Does it use the PC as a Master or is it peer to peer?

Does it have any error checking? (unlike KISS)

Tom, W2VY

79. Re: [NETSIG:1268] Basic Network Infrastructure

From: ssampson@icon.net (Steven R. Sampson)
Date: Sat, 20 May 1995 12:49:35 -0500
To: netsig@tapr.org
Message-ID: <199505201758.MAA32427@ns2.icon.net>
Rendered body type: text/plain

>Are this 9600 bps hub based? can you recommand router solutions for
>building distributed 9600 cells in a urban area ?

I would recommend the article "The HUB 5/29 IP Routing Experiment" by
Paul Overton, G0MHD, and Ian Wade, G3NRW, which is published in the ARRL
12th Digital Communications Conference. Either that, or a ROSE chip X.25
based solution for point-to-point between cells.

>I'd have a question about the "backbone network" which should links the
>cells. I know that point to point directive links are better for
>higher speed links. But I'm interested in an architecture model that every
>node can hear any other, with no directive antennas (Ground Plane),
>in a short area, for running dynamic routing. Do you have any
>experience on such model?
>Thank you.
>-Ionel

In a short area? I think short area backbones are an
oxymoron (two words that don't go together). Forget it,
use a beam, and 3 or 4 frequencies to avoid hidden nodes.

Re: bandwidth of 56 kbps and recommended channel spacing.
Ian McEachern, VE3PFH, says "It is recommended that
general coverage repeaters [sic] sites using multiple
standard DSY modems should maintain a channel spacing of
150 kHz or more." and "It is recommended that networks
using DSY modems should maintain a minimum seperation of
100 kHz to the nearest NBFM carrier." Page 99, ARRL 10th
Computer Networking Conference.

--
Steve

80. Re: [NETSIG:1273] Re: Use for 219 MHz

From: "Brian A. Lantz" <brian@lantz.com>
Date: Sat, 20 May 1995 17:11:33 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9505201727.R6356-0100000@lantz.com>
Rendered body type: text/plain

On Fri, 19 May 1995, Hank Oredson wrote:

> > The PacComm Spirit2 (formerly Sprint2) will handle 57.6K with the 20Mhz
> > parts in it. Available for some time.
> >
> > The 'problem' is the radios. Getting ones that will handle the bandwidth,
> > that are available and affordable.....
> >
>
> Can I plug a ks-900 or d4-10 onto this tnc?
> (um, and will it work if I do ... ?)

Yes, quite well....

> i.e. if I bought two of these tncs, and two ks-900s, and the appropriate
> power supply/feedline/antenna/etc. and I up and running at 56 kbps?

Well, I'm not as familiar with the ks-900, but the d4-10 will handle
19.2K out of the box, and it is SUSPECTED that 38.4K is also possible
without mod, tho we haven't tried that one first hand, here.

We are going to set up a pair on the bench, soon, and see how well 38.4
WILL work, though....

56K would require mods, since the d4-10 doesn't have enough bandwidth
without mods, though....

> How does my g8bpq node or JNOS talk to them? RS-232 port?

The same as it does any other TNC-2 compatible, since that's what it is.

> Will they run NET/ROM .. TheNet ...
>
> Do they talk KISS? Multi-drop KISS?

Any eprom software that you can put into a TNC-2 (Tiny 2, 1270, etc.)
will plug right into a SPIRIT.

> i.e. tell us a bit more about them ... is this really "plug and play" ?

Well, my personal experience here.....

About a year ago I was setting up a new 9.6K link to the house, and got
one of the early SPRINT-2's from PacComm. At the same time, several of us
had purchased Motorola Radius's and Chuck/KP4DJT did the 5 minute mods
for these radios and made up the cables for us all. There were 5 Radius'
going up on the same frequency.

I took the SPRINT out of the box, moved the jumpers to the settings in
the docs, burned a ROSE eprom, connected it to the home COAXLAN,
connected the radio, and was on the air. COMPLETLY plug-and-play.

To this day, I have only had that SPRINT open to change eproms. No
adjustments, no mods, no nothing! Just enjoyment.

Having worked for PacComm, I know the flowers and well as the weeds, but
I would have no problem at all recommending SPIRIT's to anyone.

In fact, I led a project at my former employer in which we used SPIRITs
as the solution to pilot the project.

> I've not seen any ads for these in the ham radio magazines - perhaps
> have simply missed them. What do they cost?

I think someone else already answered this one.....

```
>    ...  Hank
>
>
>
>
> --
>
> Hank Oredson @ Mentor Graphics             Library Operations
> Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
> Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM


------------------------------------------------------------
Brian A. Lantz                              brian@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

81. Spirit II Tnc's!!

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Sat, 20 May 1995 23:24:47 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950520230929.28436A@africa.connectus.com>
Rendered body type: text/plain

I have just purchased NINE of the Spirit II Tnc's for an across the state backbone here in Nevada. All the TNC's were NODE models and were tested without any problems detected. All but two will be at 9600 baud and the other 2 are at 4800. The 4800 baud ones will be on 6 meters and the others are on UHF Mitreks.

   We have modified several Mitreks with the K0PFX mods for 9600 baud. With these Mitreks plugged into the Spirit II's, they are not missing a beat with passing data right now. Several of the others are being tested at 19,200 and need to do a bit more tweaking, but should look good after we are done. Hope to have the 19,200 stuff installed at a new Internet LINUX/NOS box. The Mitreks are running TXD of 5 and look GREAT.

    If anyone is looking for a TNC that really meets standards of networking 9600 and 19,200 right now, nothing will beat the Spirit II!!

   PacComm also gives price breaks for quantity.....Its the way to go.

    Good Luck!!   73   Rich KI3V/7   Reno Nevada

```
**********************************************************************
Richard Hallman                 Internet: ki3v@connectus.com
11870 Heartpine St
Reno Nevada 89506              Amateur Radio: KI3V
**********************************************************************
```

82. Re: [NETSIG:1277] Re: Use for 219 MHz

From: Klarsen <k5di@acca.nmsu.edu>
Date: Sun, 21 May 1995 08:08:46 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950521075136.24136C-100000@acca>
Rendered body type: text/plain

I read all the stuff on using the 219 MHz frequencys with interest because I am building a high speed system and plan to put it into a 100 KHz channel on this frequency.

        The single most important factor is that there is zero radios on the market for this frequency! If you make a device to use this frequency it MUST include a radio. My solution is exactly that of the earlier developments, a Transverter. But none exist for 219 MHz. So will have to make one.

        Sure be nice if someone would get interested in building a Transverter. I lobby for one that goes from 10.7 MHz to 219 MHz. It makes a lot of sense to do this.

To the guy in Northern California who wants to limit the use of this band to a particular KIND of 56kbps system I am glad I left California! There are a lot of nuts there...

Roy Gould, n5rg simulated the phasing ssb generator I am building and determined that if we go this way we will not be sending square wave data to the multipiers. A number of odd sidebands are generated by a good squarewave and they are a major problem.

So a lowpass filter must follow the D-A converter and add complexity before we really get started. OH well nobody said it is easy.

-karl k5di

83. Re: [NETSIG:1280] Spirit II Tnc's!!

From: "Jay Townsend" <jayt@comtch.iea.com>
Date: Sun, 21 May 1995 07:38:19 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <m0sDC96-0003WtC@comtch.iea.com>
Rendered body type: text/plain

Do you happen to have a file on the Mitrek's ? I just picked up a couple and am still working on the gateway interface.

Guess we will have to swing from Boise, Idaho down to the Nevada backbone!

73
--
Jay Townsend, Ws7i < jayt@comtch.iea.com >

84. [NETSIG:1266] Re: Use for 219 MHz

From: WCHAST@delphi.com
Date: Sun, 21 May 1995 10:53:52 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HQRGEA8LI09DDKTX@delphi.com>
Rendered body type: text/plain

I believe that PacComm is now building a 56kb TNC known as the Spirit, of course
the problem is in the RF department, but it would seem that a wide band RTU would be fairly easy to build, this device would then be modulated by such a box as the Spirit.

In fact I think I will go down to RatShack and buy a wireless mike to build the T part of RTU, I already have the T part and the two together will complete
the U part...

Chee gang, I don't see what is so complicated about a wideband FM transmitter and receiver?!?! The wave shapers are already out there (RUH modems run at whatever speed you can support)

Given that the inital "proof of concept" will be on something in the FM broadcast band, but it should not be that hard to replicate it in the 220mhz area...

Has anyone tried it it???

Here is another one for you... Have ANY of you tried using 49mhz walkies for data?? I have done so and they make a cheap source of 9k6 data boxes.... Try it you might just find a use for them!!

I bet if we look around us we will be greatly supprised at what is out there for low cost data links...

Here is another one, granted it is for very short haul but say to link between
two towers at a switch site or two buildings, those rapidly dropping in price LASER pointers would make good high speed short haul data links. You can now get them for less than $50 each.

What happened to alias for Ham (SCROUNGER) ???

Set there and think a bit and I think you can probably come up with some low cost
RF for the 220mhz problem. And in truth the GRAPES modems are not that expensive,
but "some construction is required"

Just some ideas for low cost data links, not all on 220mhz but data links none the
less.

By way don't forget the gunnplexers and circuits to put them into service. Yes again
construction is required, but then nothing fun comes easy!!!

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org X.121 3100813077

* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *

85. [NETSIG:1279] Re: Use for 219 MHz

From: WCHAST@delphi.com
Date: Sun, 21 May 1995 10:54:07 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HQRGELMS2S9DDKTX@delphi.com>
Rendered body type: text/plain

Hank, I have been running Spirit (ex Sprint) TNC's now for quite some time.

I did some test while at PacComm with both TheNet/NetRom and ROSE just to get numbers on operability. The Spirit works quite well with all of them.

The usage of the COAXlan makes switch/node stacks very easy to handle (plug and play... look ma NO DIODES |+]).

Most of my work has been with ROSE here locally, and I can atest to the speed with which that runs thru the Spirit.

By way with the UI handling of ROSE and what Brian Lantz has done with TNOS, the above combination of Spirit TNC's ROSE and TNOS makes for a very powerful network that can run very nicely, in fact it can even do mobile packet, and deal
with handoff from switch to switch as the mobile moves around, that one I have
worked with and tested my self and I know it WORKS.

Was very neat to observe on the LINUX TNOS screen the mobile as it moved from one ROSE switch to the neighboring switch, to see the mobile call appear with the new X.121 address, at times it would flipflop back and forth in overlapping
areas. All this done at 9k6 with the COAXlan talking 38k4 and the backbone at whatever the link could support at the time.

I guess that what I am trying to say with this and a previous message is that we have all we need out there right now to make good networks, there is still some assembly required.

Looks like PacComm is working towards a solution for the RF side of things too,
but we should not wait until there is a "off the shelf" rf box, there are many
options out there that may give us the needed fix while the off the shelf box comes out.

In terms of the 219-220 band it would be well to look at the terms that were written into it's usage, from what I can see, it looks like the usage is point
to point links. I do not see a provision for omni-directional systems.

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org X.121 3100813077

* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *

86. Re: [NETSIG:1282] Re: Spirit II Tnc's!!

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Sun, 21 May 1995 10:22:41 -0700 (PDT)

To: Jay Townsend <jayt@comtch.iea.com>
Cc: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950521101922.3269C-100000@africa.connectus.com>
Rendered body type: text/plain

Hi Jay!! Hope your doing well......
I have been in touch with several people in Idaho and we are
planning to link the two states together. I already have a site
offered and permits have been submitted. I will send you
the mods in the mail. Nothing on disk yet. Mel, K0PFX has all the docs
for his mods and maybe he now has them on disk for download.
Keep in touch......Bigger and better plans ahead!!

      73 Rich KI3V/7

****
Richard Hallman Internet: ki3v@connectus.com
11870 Heartpine St IP Address:
Reno Nevada 89506 Amateur Radio: KI3V
****

On Sun, 21 May 1995, Jay Townsend wrote:

> Do you happen to have a file on the Mitrek's ? I just picked up a couple and
> am still working on the gateway interface.
>
> Guess we will have to swing from Boise, Idaho down to the Nevada backbone!
>
> 73
> --
> Jay Townsend, Ws7i < jayt@comtch.iea.com >
>
>

87. Re: [NETSIG:1280] Spirit II Tnc's!!

From: Kendall Mauldin <silhouet@thelair.zynet.com>
Date: Sun, 21 May 1995 11:32:27 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.950521112957.4066B-100000@thelair.zynet.com>
Rendered body type: text/plain

On Sun, 21 May 1995, Richard Hallman KI3V/7 wrote:

>   I have just purchased NINE of the Spirit II Tnc's for an across the
> state backbone here in Nevada. All the TNC's were NODE models and were
> tested without any problems detected. All but two will be at 9600 baud
> and the other 2 are at 4800. The 4800 baud ones will be on 6 meters
> and the others are on UHF Mitreks.
>
>   We have modified several Mitreks with the K0PFX mods for 9600 baud.
> With these Mitreks plugged into the Spirit II's, they are not missing a
> beat with passing data right now. Several of the others are being tested
> at 19,200 and need to do a bit more tweaking, but should look good after
> we are done. Hope to have the 19,200 stuff installed at a new Internet
> LINUX/NOS box. The Mitreks are running TXD of 5 and look GREAT.

Richard,
       Could you send me some more info about the modifications you made
to the 440 Mitreks? A local TCP/IP group here in Albuquerque, NM is
looking to use the Mitreks, but havn't had much luck.
Thanks in advance..
73s de Kendall, KC5IZT
SILHOUET@THELAIR.ZYNET.COM

88. Re: [NETSIG:1276] Re: Basic Network Infrastructure

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sun, 21 May 1995 15:12:55 -0300
To: netsig@tapr.org
Message-ID: <199505211812.PAA17793@bud.cycor.ca>
Rendered body type: text/plain

>Finally (really) I entertain comments about this type of posting. As I
>see it, we are all hams trying to improve our digital lot. I also run
>a business in this technical area. Therefore I have production resources
>which can support the availability of the kind of equipment we all want,
>but my technical design resources are dwarfed by the combined (and in

```
>many cases, individual) skills represented on this forum. We need ideas
>and feedback to provide the equipment hams need, and I need to provide some
>information in order to generate feedback. If I get bashed for this
>posting, I'll desist. Just had to respond to Hank Oredson's comment
>that he never saw an advertisement for the SPRINT. I'm going to have
>to examine my advertising strategy - we've spent the price of a new
>-- well, we spent a lot!
>
>73, Gwyn
>_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
>Gwyn Reedy, W1BEL      gwyn@paccomm.com        W1BEL@amsat.org
>

Good stuff Gwyn, I think its great that we have first-hand information about new
products. Its very factual information, not a sales-pitch.
Thanks,
Ron VE1AIC @ VE1AIC.PE.CAN.NOAM
```

89. beware of not getting an invoice from PacComm

```
From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Sun, 21 May 95 21:28:43 -0600
To: netsig@tapr.org
Message-ID: <9505220328.AA02857@n.kb7eec.ampr.org>
Rendered body type: text/plain
```

```
Just for the record, the first time I ordered a PacComm TNC (SPRINT-2 at the
time), I never received an invoice.  I receive only a copy of the credit card
charge slip.

The second time I ordered PacComm TNCs (2 SPIRIT-2s this time), I received
them nice and promptly -- last Tuesday -- but I have not yet received an
invoice, not even a credit card charge slip this time.

I am looking into this in my specific case, but I just thought I'd warn
everyone.

73,
Gary.Crum@kb7eec.ampr.org
http://www.kb7eec.ampr.org
```

90. Re: [NETSIG:1288] beware of not getting an invoice

```
From: ssampson@icon.net (Steven R. Sampson)
Date: Sun, 21 May 1995 23:38:18 -0500
To: netsig@tapr.org
Message-ID: <199505220447.XAA00121@ns2.icon.net>
Rendered body type: text/plain
```

```
>Just for the record, the first time I ordered a PacComm TNC, I never received
>an invoice.

Dear me.  Did you call Ralph Nader?
```

91. 220 MHz 56k data radios

```
From: KN6UO@aol.com
Date: Mon, 22 May 1995 05:18:35 -0400
To: netsig@tapr.org
Message-ID: <950522051829_126958851@aol.com>
Rendered body type: text/plain
```

```
To those more knowledgeable than I,

Please help me to understand more about 56k data radios & 220 MHz.  I asked
the following question of someone in the RF field and can not understand the
reply that I received.  Hopefully there is someone out there who can help me
out.
----------------------------------------------------------------
Here is the question

 I have the opportunity to purchase 2 Midland model 13-509 VHF/FM radios.  Do
you know if these radios can be modified for rx/tx of 56k data siginals?  If
so do you do you know the mods?  I have very recently subscribed to netsig,
and am excited to find that there are others out there asking the same
questions.  Thanks for your help.
-------------------------------------------------------
Here is the reply I received

Kevin, I do not know about the Midland radios.
```

What is needed are 220 MHz Transverters; that is boxes that take RF at 29-30
MHz and convert it to RF at 219-220 MHz.

Best bet is finding some used Microwave Modules transverters and modifying
them to cover down the extra MHz, I suspect.

I am a recent subscriber to netsig, and have not been in on all of the
discussion which has gone on about 220MHz 56k data radios, so this question
may seem dumb to some, but I do not understand why Transverters are needed.
 Please help me with the following questions:

Why would I need a Transverter if I had a radio capable of Rx & Tx on 220
MHz?
Are 220 MHz commercial radios not able to be modified for 56k data, is that
the reason for the need for transverters?
If you Rx 220 RF and convert it to 29-30 MHz then you need a radio with an
even wider Rx filter for 56k data, why should I go this route if I had a 220
MHz transceiver?

Any and all help on the subject would be appreciated

Thanks
Kevin

92. Re: [NETSIG:1290] 220 MHz 56k data radios

From: ferracci@dialup.francenet.fr (Laurent Ferracci - F1JKJ)
Date: Mon, 22 May 1995 13:53:39 +0200
To: netsig@tapr.org
Message-ID: <199505221153.NAA00340@chleuasme.francenet.fr>
Rendered body type: text/plain

>Please help me to understand more about 56k data radios & 220 MHz:
>What is needed are 220 MHz Transverters; that is boxes that take RF at 29-30
>MHz and convert it to RF at 219-220 MHz.

>Why would I need a Transverter if I had a radio capable of Rx & Tx on 220
>MHz?

Kevin,

There are two ways of having 56k on 220Mhz.
The first one is working in some places: It uses a Grapes 56k RF MODEM. That
means that the modem output is an RF modulated signal, 28-30Mhz. That's why
you need to use a transverter.

The second is the use of a 56k TNC (Spirit II from Paccom). This way, you
don't need any transverter. But no radio exist that will transmit 56k
correctly (it need 100Khz of bandwidth).

The person who answered your question didn't seem to know the last solution.

73,
/\
             Laurent Ferracci - F1JKJ
                  F1JKJ@amsat.org
                Fidonet 2:323/22.1
             Compuserve ID 100407,436
 \/

93. Re: [NETSIG:1289] Re: beware of not getting an invoice

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 22 May 1995 07:37:37 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950522073625.15271C-100000@acca>
Rendered body type: text/plain

On Sun, 21 May 1995, Steven R. Sampson wrote:

> >Just for the record, the first time I ordered a PacComm TNC, I never received
> >an invoice.
>
> Dear me. Did you call Ralph Nader?
>
>
        Best to call Sprint. There out to get PacComm.

94. Re: [NETSIG:1292] Re: beware of not getting an invoice

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 22 May 95 09:54:50 EDT
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <15021573.1aed@ram.net>
Rendered body type: text/plain

>From: Klarsen <k5di@acca.nmsu.edu>
>Subject: [NETSIG:1292] Re: beware of not getting an invoice
>Date: Mon, 22 May 1995 08:47:31 -0500
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>
>
>
>On Sun, 21 May 1995, Steven R. Sampson wrote:
>
>> >Just for the record, the first time I ordered a PacComm TNC, I never rece
>ived
>> >an invoice.
>>
>> Dear me. Did you call Ralph Nader?
>>
>>
>   Best to call Sprint. There out to get PacComm.
>
>

I wonder if they will go after the contesters... we just had the 6Meter
Sprints, 2 Meter Sprint, etc

Do we need to change those names too?

Hi Hi

tom

95. 219 MHz packet

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 22 May 1995 07:58:02 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950522074020.15271D-100000@acca>
Rendered body type: text/plain

It's clear there is a lot of confusion about how to get high
speed packet radio working on the new 219 MHz band. Here is what you need
to know.

        The GRAPES system in use in the SouthEast USA makes a signal on
the 10 meter band between 28 and 30 MHz. This can be put on any vhf/uhf
frequency with a linear Transverter.

        A transverter takes the input signal at low level and converts it
by mixing with local oscillators to the desired frequency. Also you will
need a amplifier that makes the 25 watts you want. It does not
include a receiver path. You need to buy a vhf/uhf receiveing converter
that converts to the 10 meter frequency your using.

        PacComm sells the G3RUH modem that is supposed to work at 56 kbps
but to my knowledge no-one has ever done it. This modem should work with
any FM radio that can be tuned to 219 MHz, and modified to have a wide
receive and transmit bandwidth. I have a Clegg FM-76 that is on 223.4 now
and could be modified...but need to find another guy close that also has
both items. We do need to TEST.

        So that is all I know about the subject. I hope to learn more
about the Transverter market. I have no idea where to go and buy a
transverter.

-73, de karl k5di

96. Re: [NETSIG:1289] Re: beware of not getting an invoice

From: "Brian A. Lantz" <brian@lantz.com>
Date: Mon, 22 May 1995 10:55:12 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9505221049.E6356-0100000@lantz.com>
Rendered body type: text/plain

On Sun, 21 May 1995, Steven R. Sampson wrote:

> >Just for the record, the first time I ordered a PacComm TNC, I never received
> >an invoice.
>
> Dear me. Did you call Ralph Nader?
>

Oh, no! This is FAR more important than that! Email president@whitehouse.gov..

This seems to be a conspiracy of the highest order!

;-)

If you put it on a credit card, what do YOU care! A piece of paper from
PacComm is just that, a piece of paper.....

If PacComm invoice are THAT valuable, maybe I should get some from Gwyn,
and go into business! How much are they worth apiece, Gary?

Brian A. Lantz   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

97. Re: Idaho

From: "Jay Townsend" <jayt@comtch.iea.com>
Date: Mon, 22 May 1995 08:03:33 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <m0sDZ13-000AJlC@comtch.iea.com>
Rendered body type: text/plain

>
> Hi Jay!!   Hope your doing well......
> I have been in touch with several people in Idaho and we are
> planning to link the two states together.   I already have a site
> offered and permits have been submitted.   I will send you
> the mods in the mail.   Nothing on disk yet. Mel, K0PFX has all the docs
> for his mods and maybe he now has them on disk for download.
> Keep in touch......Bigger and better plans ahead!!
>
>   73   Rich KI3V/7

Are cluster guy in Boise is AA7TH and he is on 145.13 I believe and we use
the backbone freq of 145.53 which extends from Boise to Spokane thru Baker,
Oregon and Pasco WA.

I will look for 'em in the snail. Still trying 10 Mhz when we have some
propogation which isn't very often.

73

--
Jay Townsend, Ws7i < jayt@comtch.iea.com >

98. Re: [NETSIG:1277] Re: Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Mon, 22 May 95 08:29:28 PDT
To: netsig@tapr.org
Message-ID: <9505220829.ZM25400@hanko>
Rendered body type: text/plain

On May 20, 11:44am, Tom Moulton wrote:
> Subject: [NETSIG:1277] Re: Use for 219 MHz
> Hank,
>
> Multidrop KISS?
>
> Does it use the PC as a Master or is it peer to peer?
>
> Does it have any error checking? (unlike KISS)

>
> Tom, W2VY
>-- End of excerpt from Tom Moulton

Sounds like you have been out of touch for awhile ...
Yes it has error checking and yes it can run in a polled mode.
Both are optional.

It's an obvious (and very useful) extension to the KISS protocol.

For systems with many channels, tncs like the kpc-9612 are ideal:
you can support two or three kpc-9612 on a single 19.2k serial
port, giving 2-3 9600 baud plus 2-3 1200 baud packet ports.

We built almost all of our network this way, running the g8bpq
switch on Data Engines or junker AT boxes. Using the g8bpq
switch avoids the "diode matrix disaster" (single switch with
multiple callsigns and multiple routing databases that cannot
ever be brought into sync). "One site, one callsign" works
a WHOLE lot better ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

99. Re: [NETSIG:1279] Re: Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Mon, 22 May 95 08:37:50 PDT
To: netsig@tapr.org
Message-ID: <9505220837.ZM25430@hanko>
Rendered body type: text/plain

On May 20, 4:07pm, Brian A. Lantz wrote:
> Subject: [NETSIG:1279] Re: Use for 219 MHz
> On Fri, 19 May 1995, Hank Oredson wrote:
>
> > > The PacComm Spirit2 (formerly Sprint2) will handle 57.6K with the 20Mhz
> > > parts in it. Available for some time.
> > >
> > > The 'problem' is the radios. Getting ones that will handle the bandwidth,
> > > that are available and affordable.....
> > >
> >
> > Can I plug a ks-900 or d4-10 onto this tnc?
> > (um, and will it work if I do ... ?)
>
> Yes, quite well....
>
>
> > i.e. if I bought two of these tncs, and two ks-900s, and the appropriate
> > power supply/feedline/antenna/etc. and I up and running at 56 kbps?
>
> Well, I'm not as familiar with the ks-900, but the d4-10 will handle
> 19.2K out of the box, and it is SUSPECTED that 38.4K is also possible
> without mod, tho we haven't tried that one first hand, here.
>
> We are going to set up a pair on the bench, soon, and see how well 38.4
> WILL work, though....
>
> 56K would require mods, since the d4-10 doesn't have enough bandwidth
> without mods, though....

Has this been tested? Claims 100 khz in "wide band" switch position,
and 20 khz in "narrow band" switch position. 100 khz should do just
fine for 38.4, and presumably 56k (?)

<deletia>

Guess I need to pick up a few of these tncs. We have a fairly
large number of 9.6k point-to-point links that are starting to
saturate. Need to do something to remove those bottlenecks.
Several of the links use Data Engines and D4-10s, so it would be

simple to unplug the D4-10 from the Data Engine, plug it into
the tnc, plug the tnc into the Data Engine serial port.
(And add a ks-900 to the Data Engine for 9600 baud user port ...)

We were actually fairly clever with these links and put them
onto 100 khz channels, assuming we would want to speed them up
"someday" ... "someday" seems to have arrived already ...

I'd like to thank everyone who responded - *excellent* information,
and a lot of good ideas on how to procede.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

100. Re: [NETSIG:1297] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 22 May 95 12:19:49 EDT
To: netsig@tapr.org
Message-ID: <15021573.1aee@ram.net>
Rendered body type: text/plain

>Sounds like you have been out of touch for awhile ...

I'm sorry I have young kids...

>Yes it has error checking and yes it can run in a polled mode.
>Both are optional.

My real question is can a version of KISS run OK in multidrop
without a polled (master/slave) mode?

I am considering adding either an upadated KISS or PPP to ROSE,
I personally feel that PPP is a better direction to go...

(What ever I use *must* be error free)
>
>It's an obvious (and very useful) extension to the KISS protocol.

Any thoughts on using PPP?

>
>We built almost all of our network this way, running the g8bpq
>switch on Data Engines or junker AT boxes. Using the g8bpq
>switch avoids the "diode matrix disaster" (single switch with
>multiple callsigns and multiple routing databases that cannot
>ever be brought into sync). "One site, one callsign" works
>a WHOLE lot better ...

In a manual routing situation I agree. With ROSE it's one Network Address
for a specific RF port. Which works even better... (IMHO)

>
>   ... Hank
>

Tom, W2VY

101. Re: [NETSIG:1299] Re: Use for 219 MHz

From: Klarsen <k5di@acca.nmsu.edu>
Date: Mon, 22 May 1995 11:55:31 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950522114845.2568A-100000@acca>
Rendered body type: text/plain

Tom I fear Hank was not clear on how the polled kiss thin works.
It works in conjunction with the g8bpq switch. You MUST have the g8bpq
running AND configured to talk to polled kiss. Each tnc MUST be a tnc-2
or clone that can use the g8bpq kiss. Each tnc has a kiss e-prom that has
a particular bit set so it is known as tnc a, b, c ect. The tnc's are
connected by a 3 wire cable with diode blocking so all tnc's can listen
and talk to the g8bpq switch. It works fine with 2 tnc's and am sure
more.

Get a copy of the switch and read the .doc Tom.

73, de karl k5di

102. Re: [NETSIG:1299] Re: Use for 219 MHz

From: ssampson@icon.net (Steven R. Sampson)
Date: Mon, 22 May 1995 13:23:07 -0500
To: netsig@tapr.org
Message-ID: <199505221832.NAA11453@ns2.icon.net>
Rendered body type: text/plain

>I am considering adding either an upadated KISS or PPP to ROSE,
>I personally feel that PPP is a better direction to go...

>Any thoughts on using PPP?

Nah. What would you do with it? The hobbiest computer is mostly 386/486 DOS, Windows, and Linux. There's a smattering of everything else. If I put a ROSE in a TNC I would either want it to sit on a tower and talk to another ROSE chip, or if at home, talk to my computer. I'm sure what the ROSE uses now is sufficient. If not just add CRC or Checksum if that's what it is lacking.

Why not port the ROSE code to the PC? It can then interface directly with a current ROSE TNC and DOS/Windows programs. The Linux OS is getting more and more popular. I'd think building on the AX.25 kernel done for IP and providing another ifconfig option would be interesting. Caldera (http://caldera.com/) is getting near with their Linux version which will provide full access to Novell. That version with AX.25 IP and ROSE would be fun to connect to a radio.

Otherwise it is just as easy to set up a virtual circuit connect, and do IP over ROSE to the other end like people are doing now.

Just my opinion.

--
Steve

103. Re: [NETSIG:1300] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 22 May 95 14:27:54 EDT
To: netsig@tapr.org
Message-ID: <15021573.1af3@ram.net>
Rendered body type: text/plain

>
> Tom I fear Hank was not clear on how the polled kiss thin works.
>It works in conjunction with the g8bpq switch. You MUST have the g8bpq
>running AND configured to talk to polled kiss. Each tnc MUST be a tnc-2
>or clone that can use the g8bpq kiss. Each tnc has a kiss e-prom that has
>a particular bit set so it is known as tnc a, b, c ect. The tnc's are
>connected by a 3 wire cable with diode blocking so all tnc's can listen
>and talk to the g8bpq switch. It works fine with 2 tnc's and am sure
>more.
>
> Get a copy of the switch and read the .doc Tom.
>
>73, de karl k5di
>
>

I have already read the docs, I thought that Hank was talking about something newer... oh well...

I guess PPP is a better long term solution...

tom

104. Re: [NETSIG:1300] Re: Use for 219 MHz

From: hanko@wv.MENTORG.COM (Hank Oredson)
Date: Mon, 22 May 95 12:57:27 PDT
To: netsig@tapr.org
Message-ID: <9505221257.ZM26028@hanko>
Rendered body type: text/plain

On May 22, 1:13pm, Klarsen wrote:
> Subject: [NETSIG:1300] Re: Use for 219 MHz
>
>   Tom I fear Hank was not clear on how the polled kiss thin works.
> It works in conjunction with the g8bpq switch. You MUST have the g8bpq
> running AND configured to talk to polled kiss. Each tnc MUST be a tnc-2
> or clone that can use the g8bpq kiss. Each tnc has a kiss e-prom that has
> a particular bit set so it is known as tnc a, b, c ect. The tnc's are
> connected by a 3 wire cable with diode blocking so all tnc's can listen
> and talk to the g8bpq switch. It works fine with 2 tnc's and am sure
> more.
>
>   Get a copy of the switch and read the .doc Tom.

Not only tnc2s, but a few others, e.g. all Kantronics tncs.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

105. Re: [NETSIG:1301] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 22 May 95 16:32:21 EDT
To: netsig@tapr.org
Message-ID: <15021573.1af4@ram.net>
Rendered body type: text/plain

>>I am considering adding either an upadated KISS or PPP to ROSE,
>>I personally feel that PPP is a better direction to go...
>
>>Any thoughts on using PPP?
>
>Nah. What would you do with it? The hobbiest computer is mostly
>386/486 DOS, Windows, and Linux. There's a smattering of everything

How about a standard PPP interface that your PC could talk to?

Porting ROSE to the PC has been done. I really feel that ROSE does better
inside the network. AX.25 I and UI frames could be used to access systems.

I'm also looking at the ETHRAX25 driver <--> ROSE UI for access as well.

Let's keep the Host specific code to a minimum. (?)

Tom

106. TEKK, MFJ or KAM transceiver ?

From: ferracci@dialup.francenet.fr (Laurent Ferracci - F1JKJ)
Date: Mon, 22 May 1995 23:32:12 +0200
To: netsig@tapr.org
Message-ID: <199505222132.XAA22945@chleuasme.francenet.fr>
Rendered body type: text/plain

Hi,

I am looking for a packet-only transceiver , that could run 9600 (and more).
I found three solutions:
        -TEKK KS900 and KS960 (what's the difference ?) telemetry radios (?)
modified by Paccom, ready to run 9600 or 19200bps. Price around $230. Works
on 70cm.
        -MFJ, in an old QST, advertised for a 9600 VHF transceiver (i wonder
if 9600 on 2m is a good idea). Price $119.
        -KAM has some transceivers on 2m or 70cm, for 9600. No info about price.

I would like to receive comments about those radios: According to you, which
one is the best choice, and the easier way to follow speed growth ?
Any comments appreciated !

73

                                                                F1JKJ@Amsat.org
   From Laurent FERRACCI, F1JKJ
                                  Fidonet 2:323/22.1

Compuserve ID 100407,436

107. Re: Use for 219 MHz

From: pipe2@oeonline.com
Date: Mon, 22 May 95 19:36 EDT
To: netsig@tapr.org
Message-ID: <m0sDh0y-0002X2C@oeonline.oeonline.com>
Rendered body type: text/plain

>> Here is another one, granted it is for very short haul but say to link
>> between two towers at a switch site or two buildings, those rapidly
dropping >> in price LASER pointers would make good high speed short haul
data links. You >> can now get them for less than $50 each.

MJK industries is an excellent source of laser diodes (the ideal laser for this purpose). I have used Exar 2211 and Exar 2207 FSK mod/demod chips to handle 115,200 bps over a laser link. It worked up to about 1/4 mile or so with no lenses. It would be possible to handle very high data rates (1 Mbps+) using a laser diode and PIN diode to recieve as well as faster FSK chips. Use infrared lasers unless you want to confuse your neighbors when it gets foggy ;-)

-Bill KB8WYP

108. Re: beware of not getting an invoice from PacComm

From: Gary Crum <crum@n.kb7eec.ampr.org>
Date: Mon, 22 May 95 18:12:23 -0600
To: netsig@tapr.org
Message-ID: <9505230012.AA03167@n.kb7eec.ampr.org>
Rendered body type: text/plain

I wrote:
The second time I ordered PacComm TNCs (2 SPIRIT-2s this time), I received them nice and promptly -- last Tuesday -- but I have not yet received an invoice, not even a credit card charge slip this time.

Well I guess that U.S. Sprint phone call to the Better Business Bureau did the trick. :-) I got the invoice today! It arrived in a letter 6 days after the order itself, but at least I got it!

I think PacComm is on the move, and we'll know for sure that they're on the ball if they start selling a PackeTen with ethernet port, and push the price down if they can!

Right, well, I sure made a mountain out of a mole hill! But wait, there's more! I am big on warranty statements, too. But, in the case of the SPIRIT-2, the warranty is explicitly for 1-year -- so I don't have much to complain about there.

Gary.Crum@kb7eec.ampr.org
http://www.kb7eec.ampr.org

109. Re: [NETSIG:1299] Re: Use for 219 MHz

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Mon, 22 May 1995 12:38:38 -0500 (EST)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950522123744.218A-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Mon, 22 May 1995, Tom Moulton wrote:

> >Sounds like you have been out of touch for awhile ...
>
> I'm sorry I have young kids...
>
> >Yes it has error checking and yes it can run in a polled mode.
> >Both are optional.
>
> My real question is can a version of KISS run OK in multidrop
> without a polled (master/slave) mode?
>
> I am considering adding either an upadated KISS or PPP to ROSE,
> I personally feel that PPP is a better direction to go...
>
> (What ever I use *must* be error free)

Well, you can always use the BLP/DLC/pseudo-AFT protocol set from TAPR
host mode :)

Howie

--
Howard Goldstein hg@n2wx.ampr.org
N2WX http://www.tapr.org/~n2wx/

110. Re: [NETSIG:1301] Re: Use for 219 MHz

From: ferracci@dialup.francenet.fr (Laurent Ferracci - F1JKJ)
Date: Tue, 23 May 1995 08:28:18 +0200
To: netsig@tapr.org
Message-ID: <199505230628.IAA09582@chleuasme.francenet.fr>
Rendered body type: text/plain

>Why not port the ROSE code to the PC?

It has been done here. I don't like this system (neither ROSE !) but that
exists. This way a P.C can run up to 8 (10 if using the 2 COMs) radio ports,
and use some COMs to be linked with a FBB server, or another node (BPQ for
example). The system has (i think) all ROSE functions (hierarchical routing
and so on).

Laurent

F1JKJ@Amsat.org
From Laurent FERRACCI, F1JKJ
Fidonet 2:323/22.1

Compuserve
ID 100407,436

111. [NETSIG:1288] beware of n

From: djm@phx-az.com (Daniel Meredith)
Date: Tue, 23 May 1995 04:58:00 GMT
To: netsig@tapr.org
Message-ID: <950522222521484@phx-az.com>
Rendered body type: text/plain

GC>From: Gary Crum <crum@n.kb7eec.ampr.org>
GC>To: netsig@tapr.org
GC>Date: Sun, 21 May 1995 22:43:48 -0500
GC>Subject: [NETSIG:1288] beware of not getting an invoice from PacComm

GC>Just for the record, the first time I ordered a PacComm TNC (SPRINT-2 at the

GC>time), I never received an invoice. I receive only a copy of the credit car

GC>charge slip.

GC>The second time I ordered PacComm TNCs (2 SPIRIT-2s this time), I received
GC>them nice and promptly -- last Tuesday -- but I have not yet received an
GC>invoice, not even a credit card charge slip this time.

GC>I am looking into this in my specific case, but I just thought I'd warn
GC>everyone.

GC>73,
GC>Gary.Crum@kb7eec.ampr.org
GC>http://www.kb7eec.ampr.org

I never received any invoices either, don't feel bad...You are not
alone.

Dan

----- \---------------/ -----
Arizona Network Intertie Group
"Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP Voice: +1-602-912-5671
P.O. Box 45378 Fax : +1-602-912-0426
Phoenix, Arizona BBS : +1-602-912-0225
85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator

---
 * OLXWin 1.00 * MSI HQ! BBS - Home of Off-Line Xpress 805-873-2400

112. What are FCC rules for 219 Mhz?

From: ac448@rgfn.epcc.Edu (Roy E Gould)
Date: Tue, 23 May 95 07:47:47 MDT
To: netsig@tapr.org
Message-ID: <9505231347.AA09138@rgfn.epcc.Edu>
Rendered body type: text/plain

I am glad to learn that the FCC has approved the 219 band for
Amateur use. Now I would like to know what the FCC actually
gave us.

I have heard that a 100 Khz bandwidth limitation has been
imposed. Does anyone know for sure if this is correct?

Did the FCC impose any baud limitations?

I believe the power authorized by the FCC is 50 watts output.
Is this correct?

What forms of modulation are legal--FM, PM, AM, etc?

What other limitations did the FCC impose?

Thanks for any information can provide.
Roy Gould N5RG

113. 219 Mhz radio standards

From: ac448@rgfn.epcc.Edu (Roy E Gould)
Date: Tue, 23 May 95 07:57:45 MDT
To: netsig@tapr.org
Message-ID: <9505231357.AA10551@rgfn.epcc.Edu>
Rendered body type: text/plain

It seems to me that the new 219 Mhz band can be very benificial
to packet radio since is set up for the exclusive use of packet
radio.

To make the best use of this band, radio standards should be
adapted that takes maximum advantage of what is allowed under
the FCC rules. i.e. if 100 Khz bandwidth is allowed, this
bandwidth should be efficiently used to produce the highest
baud allowed by the FCC rules.

This may mean that a new radio and modem will have to be
developed to take full advantage of what the FCC has given
us. If so, lets get busy and figure out how to do it.

73, Roy Gould N5RG

114. Re: [NETSIG:1308] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 23 May 95 10:55:37 EDT
To: netsig@tapr.org
Message-ID: <15021573.1af6@ram.net>
Rendered body type: text/plain

>> I am considering adding either an upadated KISS or PPP to ROSE,
>> I personally feel that PPP is a better direction to go...
>>
>> (What ever I use *must* be error free)
>
>Well, you can always use the BLP/DLC/pseudo-AFT protocol set from TAPR
>host mode :)
>
>Howie

"pseudo-AFT"? AFT is the async framing that was adopted in ISO 3309:1984
which defines HDLC.

If the Host Mode protocols don't include the entire fram then I can't use
them.

A footnote on AFT. PPP uses AFT for transparency and CRC checking of the Link
Control Protocol defined in PPP.

tom

115. Re: [NETSIG:1306] Re: Use for 219 MHz

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Tue, 23 May 1995 08:29:31 -0700
To: netsig@tapr.org
Message-ID: <199505231530.KAA16235@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>>> Here is another one, granted it is for very short haul but say to link
>>> between two towers at a switch site or two buildings, those rapidly
>dropping >> in price LASER pointers would make good high speed short haul
>data links. You >> can now get them for less than $50 each.
>
>MJK industries is an excellent source of laser diodes (the ideal laser for
>this purpose). I have used Exar 2211 and Exar 2207 FSK mod/demod chips to
>handle 115,200 bps over a laser link. It worked up to about 1/4 mile or so
>with no lenses. It would be possible to handle very high data rates (1
>Mbps+) using a laser diode and PIN diode to recieve as well as faster FSK
>chips. Use infrared lasers unless you want to confuse your neighbors when it
>gets foggy ;-)
>
>   -Bill KB8WYP
>
I'd like more information on this topic. Are there schematics or block
diagrams available with sources and approximate costs for parts?

73 de Jack

116. Re: [NETSIG:1313] Re: Use for 219 MHz

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Tue, 23 May 1995 12:55:23 -0500 (EST)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950523125358.612B-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Tue, 23 May 1995, Tom Moulton wrote:

> >Well, you can always use the BLP/DLC/pseudo-AFT protocol set from TAPR
> >host mode :)
> >
> >Howie
>
> "pseudo-AFT"? AFT is the async framing that was adopted in ISO 3309:1984
> which defines HDLC.
>
> If the Host Mode protocols don't include the entire fram then I can't use
> them.
>

"Pseudo" in that I do a stupid checksum instead of the mandated CRC.
Everything else is right out of the AFT document you sent me some years
ago. Could easily retrofit with the CRC stuff if it were useful...

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

117. Re: [NETSIG:1315] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 23 May 95 15:27:09 EDT
To: netsig@tapr.org
Message-ID: <15021573.1afa@ram.net>
Rendered body type: text/plain

>> >Well, you can always use the BLP/DLC/pseudo-AFT protocol set from TAPR
>> >host mode :)
>> >
>> >Howie
>>
>> "pseudo-AFT"? AFT is the async framing that was adopted in ISO 3309:1984
>> which defines HDLC.
>>
>> If the Host Mode protocols don't include the entire fram then I can't use
>> them.

>>
>
>"Pseudo" in that I do a stupid checksum instead of the mandated CRC.
>Everything else is right out of the AFT document you sent me some years
>ago. Could easily retrofit with the CRC stuff if it were useful...
>
>Howie

What TNC firmware version did this host mode get released?

Do you know of any applications that support it?

tom

118. Re: [NETSIG:1304] Re: Use for 219 MHz

From: ssampson@icon.net (Steven R. Sampson)
Date: Tue, 23 May 1995 15:06:43 -0500
To: netsig@tapr.org
Message-ID: <199505232016.PAA09161@ns2.icon.net>
Rendered body type: text/plain

>>>I am considering adding either an upadated KISS or PPP to ROSE,
>>>I personally feel that PPP is a better direction to go...
>>
>>>Any thoughts on using PPP?
>>
>>Nah. What would you do with it?
>>
>How about a standard PPP interface that your PC could talk to?
>

Well it might be interesting.

Given a repeater node that sits on a tower, so users in a cell
can network, I'd find PPP an interesting feature for the backbone
side I guess. What I envision is an input frequency, an output
frequency, and a backbone link/frequency. An user emits a packet
and the repeater broadcasts it for others to hear and prevent
collision. The point being that the home PC is running a NOS
which encapsulates with AX.25. Most will use the repeater for
any routing. Cell traffic stays, while routing is directed out
the backbone link/frequency.

How does the TAPR regeneration work? I assume it is a T where
the input data is shaped and output, but also can be directed to
the TNC?? I don't know much about ROSE, but I assume the AX.25
encapsulation at the PC would handle the addressing. The address
would be the repeater callsign and SSID and the target ROSE
address. Since ROSE doesn't care what's been encapsulated, it
just makes the connection and transports the data. In my case
that would be IP or pure text for chat.

I guess I don't understand what PPP could do to improve this
application, and maybe it would be useful only in direct PC
connections. But I see the PC as more than a serial connection;
indeed, more often as a DMA card. You might enlighten me/us.

--
Steve

119. Re: [NETSIG:1316] Re: Use for 219 MHz

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Tue, 23 May 1995 19:49:11 -0500 (EST)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950523194711.313A-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Tue, 23 May 1995, Tom Moulton wrote:

> >> If the Host Mode protocols don't include the entire fram then I can't use
> >> them.
> >>
> >
> >"Pseudo" in that I do a stupid checksum instead of the mandated CRC.
> >Everything else is right out of the AFT document you sent me some years
> >ago. Could easily retrofit with the CRC stuff if it were useful...
> >
> >Howie
>

> What TNC firmware version did this host mode get released?

1.1.8

>
> Do you know of any applications that support it?
>

None that I know of even though I released DOS host code to the public
domain some years ago.

It is multidrop and robust.

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

120. Re: [NETSIG:1318] Re: Use for 219 MHz

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 24 May 95 06:36:03 EDT
To: netsig@tapr.org
Message-ID: <15021573.1afc@ram.net>
Rendered body type: text/plain

>From: Howard Goldstein <hg@penny.n2wx.ampr.org>
>Subject: [NETSIG:1318] Re: Use for 219 MHz
>Date: Tue, 23 May 1995 20:30:41 -0500
>Reply-To: netsig@tapr.org
>Sender: netsig@tapr.org
>To: netsig@tapr.org
>
>On Tue, 23 May 1995, Tom Moulton wrote:
>
>> >> If the Host Mode protocols don't include the entire fram then I can't u
>se
>> >> them.
>> >>
>> >
>> >"Pseudo" in that I do a stupid checksum instead of the mandated CRC.
>> >Everything else is right out of the AFT document you sent me some years
>> >ago. Could easily retrofit with the CRC stuff if it were useful...
>> >
>> >Howie
>>
>> What TNC firmware version did this host mode get released?
>
>1.1.8
>
>>
>> Do you know of any applications that support it?
>>
>
>None that I know of even though I released DOS host code to the public
>domain some years ago.
>
>It is multidrop and robust.
>
>Howie
>
>--
>Howard Goldstein   hg@n2wx.ampr.o
>rg
>   N2WX   http://www.tapr.org/~n2w
>x/
>

I guess it's time to upgrade my tnc code...

121. Unrecognized recipient in message

From: tsx-bbs.smtp@nashville.com
Date: Wed, 24 May 95 06:00:33
To: netsig@tapr.org
Message-ID: <199505241106.GAA25740@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

You recently sent a message to e.johnson@nashville.com which could not be
delivered. There is no person with this name at The Nashville Exchange BBS

615-383-0727. Your message was delivered to the mail clerk, Ben Cunningham,
since your intended recipient was not recognized. If you plan to send this
recipient additional mail in the future, please obtain a corrected address.

122. Unrecognized recipient in message

From: tsx-bbs.smtp@nashville.com
Date: Wed, 24 May 95 06:35:32
To: netsig@tapr.org
Message-ID: <199505241140.GAA25982@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

You recently sent a message to e.johnson@nashville.com which could not be
delivered. There is no person with this name at The Nashville Exchange BBS
615-383-0727. Your message was delivered to the mail clerk, Ben Cunningham,
since your intended recipient was not recognized. If you plan to send this
recipient additional mail in the future, please obtain a corrected address.

123. Re: [NETSIG:1319] Re: Use for 219 MHz

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Wed, 24 May 1995 13:03:14 -0500 (EST)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950524130222.196H-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Wed, 24 May 1995, Tom Moulton wrote:

> >> What TNC firmware version did this host mode get released?
> >
> >1.1.8
> >
> >>
> >> Do you know of any applications that support it?
> >>
> >
> >None that I know of even though I released DOS host code to the public
> >domain some years ago.
> >
> >It is multidrop and robust.
> >
>
> I guess it's time to upgrade my tnc code...
>

Yupper. And to keep up to date on TNC happenings, subscribe to TAPR-TNC
served up by a most familiar listserv running on dingus. (End blatant plug)

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

124. Linux articles in QEX (forward)

From: hprice@bektek.com (Harold Price)
Date: Tue, 23 May 1995 16:23:21 -0400
To: netsig@tapr.org, bruce@pixar.com (Bruce Perens)
Message-ID: <199505242022.QAA18149@ivory.lm.com>
Rendered body type: text/plain

>X-POP3-Rcpt: hprice@ivory.lm.com
>Date: Wed, 24 May 1995 15:13:37 -0500 (CDT)
>From: Walt Carter <wwc@comp.uark.edu>
>To: nk6k@amsat.org
>Subject: Linux articles in QEX
>
>Hello Harold:
>
>I just wanted to thank you and Bruce, AB6YM, for the April 1995 QEX
>article on Linux. I've been involved with Linux since some system admins
>here at the University of Arkansas turned me on to it in the summer of
>1993. I have two machines that run Linux, and one of those two will
>hopefully become n5ygr.ampr.org soon.
>
>I'm majoring in Electrical Engineering, and I should be through in
>another year. I'm involved with the Amateur Radio Club of the University
>of Arkansas, W5YM, and I enjoy the challenge of homebrewing equipment
>and/or converting hamfest "junk" into treasure. Using Linux is just an
>extention of my homebrew tendencies, I guess. Now that summer's here and

```
>I have a little free time on my hands, I hope to play around with the
>AX.25 support in the kernel, and I also hope to convince my comrades that
>Linux shoud be installed on W5YM's new computer.
>
>Again, I congratulate both Bruce and yourself for an article well
>done.
>
>73 -
>-------------------------------------------------------------------------------
>"Do NOT taunt happyfun.net!"   |Take me to the CSEG lab,
>                               |Log me into a Sun;
>Walt Carter, N5YGR;            |Buy me some choc'late and Mountain Dew;
>Lowly ELEG Senior,             |sometimes it seems like we'll never get through
>Radio Amateur,                 |as we load, load, load engr's network
>Linux Advocate and sysadmin,   |until it goes down in flames;
>ASMS Project Lab Mentor,       |Soon it's 1...2...3 in the morning
>and Twister of Wires.          |we've gone insane!!!!!!!!!
>                               |
>Internet: wwc@comp.uark.edu    |      -- CSEG/ELEG 4983 Battle Hymn
>          wwc@engr.uark.edu    |(to the tune of "take me out to the ballgame")
>Packet: N5YGR@KA5BML.AR.US.NOAM|          this version by wwc with a
>http: coming Real Soon Now     |           little help from cgibson
>-------------------------------------------------------------------------------
>
>
>
```

125. 28Mhz Transverters

From: Dirk-Jan Koopman <djk@dirku.demon.co.uk>
Date: Thu, 25 May 1995 15:49:11 +0100 (BST)
To: netsig <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.950525152024.299A-100000@dirku.demon.co.uk>
Rendered body type: text/plain

Microwave modules no longer produce 28Mhz transverters, however they have passed their existing stock and manufacturing rights to another company which is run by a radio amateur.

Unfortunately he has not got internet access, but initial enquiries can be directed thru me at the address given below.

He has, in some cases substantial, stocks of the following transverters:-

28->70Mhz
28->144Mhz
28->220Mhz
28->432-436Mhz
28->432->434, 435-437Mhz

In addition he can recrystal the 220Mhz parts to 219Mhz to order. These are all priced @ STG 160 (approx $250) (any model). All are 10W output.

These are all boxed original equipment (ie not second hand). If he should run out of any model he has the rights and capability to manufacture more units.

The manufacturer has designed a 6m transverter (of higher quality, all surface mount etc etc, really designed for the DX market) priced at STG 250 (approx $390) again 10W output.

He also has the complete range of linears, of which relevant ones might be:-

10->50W 432Mhz STG 170 (approx $270)
10->100W 432Mhz STG 340 (approx $535)
10->80W 220Mhz STG 180 (approx $285)
10->100W 144Mhz STG 180 "
10->100W 50Mhz STG 180 "

Other bands/power levels are available

Carriage would be extra at cost.

I will anybody interested in touch direct (ie he will sell to you direct, I am only the internet information gateway).

--
Dirk-Jan Koopman Tel/Fax: +44 1362 696076 Mobile: +44 973 333806
Computer Consultant Email: djk@dirku.demon.co.uk or G1TLH@GB7TLH.#35.GBR.EU

"The typewriting machine, when played with expression, is no more annoying than
the piano when played by a sister or near relation." --Oscar Wilde

126. Re: 220 MHz 56k data radios

From: jra1854@tntech.edu (Jeffrey Austen)
Date: Fri, 26 May 1995 16:35:57 -0600
To: netsig@tapr.org
Message-ID: <01HQYRVUPA5EQPH8OQ@tntech.edu>
Rendered body type: text/plain

> I have the opportunity to purchase 2 Midland model 13-509 VHF/FM radios. Do
>you know if these radios can be modified for rx/tx of 56k data siginals?

These radios can be modified for 9600 b/s operation fairly easily but they
are not very suitable for modification for higher speeds, especially for
GRAPES-compatible 56 kb/s.

For GRAPES-compatible 56 kb/s you need
(1) a GRAPES (wa4dsy) modem which converts between digital data and a
    28 MHz modulated signal, and
(2) a transverter to convert between 28 MHz and 220 MHz (or other
    frequencies).

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
+1 615 372 3485 | Cookeville Tennessee 38505   U.S.A.

127. Re: [NETSIG:1314] Re: Use for 219 MHz

From: pipe2@oeonline.com
Date: Fri, 26 May 95 22:22 EDT
To: netsig@tapr.org
Message-ID: <m0sFBVp-0002oqC@oeonline.oeonline.com>
Rendered body type: text/plain

>>MJK industries is an excellent source of laser diodes (the ideal laser for
>>this purpose). I have used Exar 2211 and Exar 2207 FSK mod/demod chips to
>>handle 115,200 bps over a laser link. It worked up to about 1/4 mile or so
>>with no lenses. It would be possible to handle very high data rates (1
>>Mbps+) using a laser diode and PIN diode to recieve as well as faster FSK
>>chips. Use infrared lasers unless you want to confuse your neighbors when it
>>gets foggy ;-)
>>
>>   -Bill KB8WYP
>>
>I'd like more information on this topic. Are there schematics or block
>diagrams available with sources and approximate costs for parts?
>
>73 de Jack

As far as I know there is no availible information on this. I am probably
wrong, homwever, since you can find just about anything if you look hard
enough. I used the spec sheets that can be ordered along with the Exar
chips. Exar provides very good data in those spec sheets so it is not
difficult to design a working circuit from them. The data sheets contain
example circuits to make the chips work, and they include info on how to
modify these circuits. DigiKey carries the Exar chips (last time I checked),
and MWK Industries (sorry I got the name wrong before) carries the laser
diodes. Note that the MWK lasers are usually surplus and although they
always have IR laser diodes, their specs will change on occasion. The laser
diode I bought from MWK was around $50, and the Exar chips were $2-3. MWK
advertises in alot of electronics magazines, and you will have to check
those for an address since I can't find my catalog :-(

Took me about a week to get a working unit. You then get to tell all your
freind that you are transmitting in the TERAhertz range! ;-)

        -Bill kb8wyp

128. Re: [NETSIG:1326] Re: Use for 219 MHz

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 26 May 1995 21:02:50 -0700
To: netsig@tapr.org
Message-ID: <199505270404.XAA24854@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Stuff deleted...

>>I'd like more information on this topic. Are there schematics or block
>>diagrams available with sources and approximate costs for parts?
>>
>>73 de Jack
>
>As far as I know there is no availible information on this. I am probably
>wrong, homwever, since you can find just about anything if you look hard
>enough. I used the spec sheets that can be ordered along with the Exar
>chips. Exar provides very good data in those spec sheets so it is not
>difficult to design a working circuit from them. The data sheets contain
>example circuits to make the chips work, and they include info on how to
>modify these circuits. DigiKey carries the Exar chips (last time I checked),
>and MWK Industries (sorry I got the name wrong before) carries the laser
>diodes. Note that the MWK lasers are usually surplus and although they
>always have IR laser diodes, their specs will change on occasion. The laser
>diode I bought from MWK was around $50, and the Exar chips were $2-3. MWK
>advertises in alot of electronics magazines, and you will have to check
>those for an address since I can't find my catalog :-(
>
>Took me about a week to get a working unit. You then get to tell all your
>freind that you are transmitting in the TERAhertz range! ;-)
>
>   -Bill kb8wyp
>
Could you describe how you are modulating the laser beam? Seems to me the
standard IR (as in remote controls) uses a technique at 40 KHz for
modulation. Is this similar to what you are doing on transmit and receive?
Wonder what the practical max signaling rate is with laser (I know the modem
chips no doubt have their own upward limitation).

Some time ago I looked at an engineering "notebook" that Radio Shack put out
in which they discussed using regular LED's for communications but I don't
recall if they described data applications..

Thanks for the info, Bill!

73 de Jack

129. '95 DCC Proceedings Deadline

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 26 May 1995 23:59:41 -0500 (CDT)
To: tapr-bb@tapr.org (TAPR-BB mailing), bbssig@tapr.org (BBS SIG mailing),
        netsig@tapr.org (NETSIG mailing), aprssig@tapr.org (APRS SIG),
        dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199505270459.XAA24090@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

1995 ARRL Digital Communications Conference
Proceedings Deadline Information

Anyone interested in digital communications is invited to submit a paper for
publication in the 1995 Conference Proceedings. Presentation at the
Conference is not required for publication. If you know of someone who is
doing great things with digital communications, be sure to personally tell
them about this! Papers are due by July 21, 1995, and should be submitted
to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111 or via the
Internet to mweinberg@arrl.org. Please contact Maty for detailed format
requirements.

Deadline: July 21, 1995 (Friday)

Start writing those papers now!
This is your opportunity to let others know what you have been doing.

130. (no subject)

From: techman@ace.com (Techman)
Date: Sat, 27 May 95 16:01:53 EST
To: netsig@tapr.org
Message-ID: <9505271601.0.UUL1.3#25274@ace.com>
Rendered body type: text/plain

SUBSCRIBE

131. (no subject)

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Sun, 28 May 1995 00:38:53 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9505280013.A13148-0100000@gateway.utilpart.com>
Rendered body type: text/plain

SUBSCRIBE

132. 9K6 with TM-401A???

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Mon, 29 May 1995 19:51:28 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950529194933.26933A-100000@africa.connectus.com>
Rendered body type: text/plain

Looking for hookup points and mods for the TM-401a
for 9600 baud.

  Thanks!   Rich KI3V

****
Richard Hallman   Internet: ki3v@connectus.com
11870 Heartpine St
Reno Nevada 89506   Amateur Radio: KI3V
****

133. Re: [NETSIG:1293] Re: beware of not getting an invoice

From: "Bob Nielsen" <nielsen@PrimeNet.Com>
Date: Sat, 27 May 1995 15:46:09 +0700
To: netsig@tapr.org
Message-ID: <199505272246.PAA15500@mailhost.primenet.com>
Rendered body type: text/plain

tmoulton@ram.net (Tom Moulton) writes:
>
> I wonder if they will go after the contesters... we just had the 6Meter
> Sprints, 2 Meter Sprint, etc
>
> Do we need to change those names too?

Now I know why Chevrolet no longer sells the Geo Sprint.

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                               AX.25: w6swe@wb7tls.az.usa.noam

134. [NETSIG:1306] Re: Use for 219 MHz

From: WCHAST@delphi.com
Date: Sat, 27 May 1995 21:25:01 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HR0G6XHPVI8ZVS8B@delphi.com>
Rendered body type: text/plain

netsig@tapr.> I have used Exar 2211 and Exar 2207 FSK mod/demod chips

I would like to see a bit of your work there. I did some testing just using
OOK
gave some very interesting results, but I understand that the Isrealies have
taken LASER links to the max using PCM.

I see Office Depot and several other office stores offering LASER pointers
for .5mw
LASER pointer for around $49.

netsig@tapr.> Use infrared lasers unless you want to confuse your neighbors
netsig@tapr.> when it gets foggy ;-)

Shucks I was going to use red and green for the light effects!! :->

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org   X.121 3100813077

* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *

135. Re: [NETSIG:1332] Re: beware of not getting an invoice

From: ssampson@icon.net (Steven R. Sampson)
Date: Tue, 30 May 1995 15:25:32 -0500
To: netsig@tapr.org
Message-ID: <199505302036.PAA00565@ns2.icon.net>
Rendered body type: text/plain

```
>> tmoulton@ram.net (Tom Moulton) writes:
>>
>> I wonder if they will go after the contesters... we just had the 6Meter
>> Sprints, 2 Meter Sprint, etc
>>
>> Do we need to change those names too?
>
>Now I know why Chevrolet no longer sells the Geo Sprint.

I wonder if Spirit isn't a bad choice as well.  Doesn't the Catholic
Church or Crow Indian tribe own that word?  (just kidding)...
--
Steve
```

136. Latest news on PANSAT

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Tue, 30 May 1995 16:51:18 -0700
To: netsig@tapr.org (TAPR Networking List)
Message-ID: <v02120d00abf15f7fd306@[204.118.182.22]>
Rendered body type: text/plain

```
* PANSAT NEWS *
===============
The Petite Amateur Navy Satellite (PANSAT) is a small, spread-spectrum
communication satellite developed by the Naval Postgraduate School (NPS)
as an educational project for officer students.  PANSAT will be a tumbling
spacecraft with a weight of 150 pounds to be completed in 1996.  PANSAT
will most likely be launched from the Space Shuttle by means of the
HitchHiker program.  The launch will place PANSAT in a Low Earth Orbit
(LEO) with an inclination of at least 28 degrees.  The spacecraft will
supply direct-sequence, spread-spectrum modulation with an operating
center frequency of 436.5 MHz, a bit rate of 9600 bits per second and
4 MB of message storage.  Amateur radio ground stations will be able to
utilize PANSAT for store-and-forward communication.

Through use by the amateur radio community PANSAT will supply a means to
demonstrate spread-spectrum communications.  In addition, PANSAT provides
many potential applications for low-cost communications.  The low
probability-of-intercept would be an important feature for the military
in downed-pilot-rescues.  The pilot could obtain his/her location through
a GPS system and uplink the information to the orbiting satellite at low
risk.  Examples of civilian uses include emergency rescue and communication
to remote areas.

To prepare the spacecraft for flight it will undergo functional and
environmental testing at the system and subsystem level.  The environmental
testing includes thermal vacuum, random vibration, and electromagnetic
interference and compatibility (EMI/EMC) testing.  All testing will be
conducted using NPS space test facilities.

A modified amateur satellite ground station is needed to communicate with
PANSAT.  The NPS ground station utilizes off-the-shelf software, is
microcomputer controlled, and is equipped with a spread-spectrum modem.
The NPS ground station is similar to a typical amateur radio user station,
except it has spacecraft command capability.  The NPS ground station is
also utilized as a classroom instructional laboratory.

[Info via the Naval Postgraduate School]


-------------------------------------------------------------------------
Dewayne Hendricks, WA8DZP ! CIS: 75210,10    AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar       ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204    ! AOL: HENDRICKS
Fax: (510) 770-9854       !
-------------------------------------------------------------------------
```

137. Re: [NETSIG:1333] Re: Use for 219 MHz

From: rdonnell@mail.eskimo.com (Robert Donnell)
Date: Wed, 31 May 1995 13:06:18 -0700

To: netsig@tapr.org
Message-ID: <199505312010.AA26272@tia1.eskimo.com>
Rendered body type: text/plain

>netsig@tapr.> Use infrared lasers unless you want to confuse your neighbors
>netsig@tapr.> when it gets foggy ;-)
>
>Shucks I was going to use red and green for the light effects!! :->
>
>
>Chuck Hast
>E-Mail wchast@delphi.com or kp4djt@ibm.net
>Amateur Packet Radio kp4djt@kp4djt
>kp4djt.ampr.org   X.121 3100813077
>
>
>* ODN Ver 1.31 Beta - Delphi Navigator for OS/2 *
>
>

Hmmm. The latest in 'dual-banders'???   :-0

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
---

138. [NETSIG:1336] Re: Use for 219 MHz

From: WCHAST@delphi.com
Date: Wed, 31 May 1995 22:20:19 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HR639VLOUA9GVPO6@delphi.com>
Rendered body type: text/plain

netsig@tapr.> Hmmm. The latest in 'dual-banders'???   :-0

Well if I go infrared too, I will have a real "multi-bander" a optical
equivalent to a HF rig.... Hmm wonder if that would sell??

Chuck Hast
E-Mail wchast@delphi.com or kp4djt@ibm.net
Amateur Packet Radio kp4djt@kp4djt
kp4djt.ampr.org   X.121 3100813077

* ODN Ver 1.33 Beta Rev B - Delphi Navigator for OS/2 *

June 1995

Original source file: netsig.9506
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9506

1. 900 Mhz Receiver

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 02 Jun 95 12:38:50 EDT
To: netsig@tapr.org (netsig TAPR), tcp-group@ucsd.edu (TCP/IP List),
tnc-tng@lantz.com (TNC Next Generation)
Message-ID: <15021573.1b3f@ram.net>
Rendered body type: text/plain

Does anyone know of any existing 900 Mhz Receiver design that is simple and
low cost to build?

It only needs to support Data.

Anyone interested in designing one?

Tom, W2VY

---

2. Re: [NETSIG:1338] 900 Mhz Receiver

From: David Bashaw <dbashaw@BayNetworks.COM>
Date: Fri, 2 Jun 95 10:39:40 PDT
To: netsig@tapr.org
Message-ID: <9506021739.AA07144@rimbaud>
Rendered body type: text/plain

> From netsig@tapr.org Fri Jun 2 09:57:44 1995
> Reply-To: netsig@tapr.org
> Originator: netsig@tapr.org
> Sender: netsig@tapr.org
> To: netsig@tapr.org
> Subject: [NETSIG:1338] 900 Mhz Receiver
> X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
> X-Comment: Tucson Amateur Packet Radio Networking SIG
> Content-Length: 175
> X-Lines: 8
>
> Does anyone know of any existing 900 Mhz Receiver design that is simple and
> low cost to build?
>
> It only needs to support Data.
>
> Anyone interested in designing one?
>
> Tom, W2VY
>

My latest catalog (effective date = 4/1/95 ;->) from Communications Concepts, Inc
lists a 33CM ATV4 Amateur Television Converter for US$ 59.00. RF out is on ch 2,3, or 4.
This should supply plenty of rx bandwidth. Should not be too hard to mix the output
to what frequency is preferred. Could the output of a g3ruh be modified to drive the
33CM tx I wonder?

73   Dave
wa6qwl

---

3. Re: [NETSIG:1339] Re: 900 Mhz Receiver

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 02 Jun 95 14:44:36 EDT
To: netsig@tapr.org
Message-ID: <15021573.1b45@ram.net>
Rendered body type: text/plain

>From: David Bashaw <dbashaw@BayNetworks.COM>

>My latest catalog (effective date = 4/1/95 ;->) from Communications Concept
>s, Inc
>lists a 33CM ATV4 Amateur Television Converter for US$ 59.00. RF out is on c
>h 2,3, or 4.
>This should supply plenty of rx bandwidth. Should not be too hard to mix the
> output
>to what frequency is preferred. Could the output of a g3ruh be modified to d
>rive the
>33CM tx I wonder?
>

>73   Dave
>wa6qwl

But isn't that just a Receive Converter? The TV does the real work.

Humm... I wonder if that could be connected to a 49Mhz headset and get any
data out of it...

tom

4. Re: [NETSIG:1340] Re: 900 Mhz Receiver

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 02 Jun 1995 13:09:36 -0700
To: netsig@tapr.org
Message-ID: <199506022013.PAA06741@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>>From: David Bashaw <dbashaw@BayNetworks.COM>
>
>>My latest catalog (effective date = 4/1/95 ;->) from Communications Concept
>>s, Inc
>>lists a 33CM ATV4 Amateur Television Converter for US$ 59.00. RF out is on c
>>h 2,3, or 4.
>>This should supply plenty of rx bandwidth. Should not be too hard to mix the
>> output
>>to what frequency is preferred. Could the output of a g3ruh be modified to d
>>rive the
>>33CM tx I wonder?
>>
>>73   Dave
>>wa6qwl
>
>But isn't that just a Receive Converter? The TV does the real work.
>
>Humm... I wonder if that could be connected to a 49Mhz headset and get any
>data out of it...
>
>tom
>
Another similar item I've seen at Wal Mart - I think the brand name was
Radio Electronics - which consisted of a separate transmitter & receiver set
for $49.95. It's function was to link the (chan 3/4) RF output of a VCR to
a remote TeeVee. 900 Mhz was used for the linking band and the receiver
output was on one of the UHF TV channels.   Wal Mart also had individual
receivers, for around $25-$30. If these units are still stocked, might be
an inexpensive way to modify and experiment with data.

73 de Jack

5. Re: [NETSIG:1340] Re: 900 Mhz Receiver

From: David Bashaw <dbashaw@BayNetworks.COM>
Date: Fri, 2 Jun 95 13:18:49 PDT
To: netsig@tapr.org
Message-ID: <9506022018.AA07389@rimbaud>
Rendered body type: text/plain

Tom said:
>
> But isn't that just a Receive Converter? The TV does the real work.

True! My fantasy is to mix ch 2 rf with a video lo and get g3ruh
data out. Probably lots of reasons this won't work. There must be some
way to take advantage of all that bandwidth. Has a $50.00 project just
turned into a $500.00 project?

>
> Humm... I wonder if that could be connected to a 49Mhz headset and get any
> data out of it...
>
> tom
>
Dave

6. Wal Marts 900 MHz rig

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sat, 03 Jun 1995 19:05:54 -0700
To: netsig@tapr.org
Message-ID: <199506040208.VAA14378@dingus.n5lyt.datarace.com>

Rendered body type: text/plain

Found that our local Wal Mart had their "VCR Multiplier" marked down from
$49.95 to $25.00 today. I see that my recollection as indicated in an
earlier post, was off a little bit. They have a brand name of Popular
Mechanics, rather than Popular Electronics. I purchased one and here's the
info from the spec sheet:

Frequency range: 906 - 926 MHz
Frequency stability: plus or minus 500 KHz.
Power rqmt: 15vdc @ 300 Ma (Tx and Rx, each)

Transmitter input levels: video 1volt, audio 600mv - 1volt
Video input impedance: 75 Ohms, RCA jack
Audio input impedance: 58 KOhm, RCA jack

Receiver has secondary input 40 - 860 MHz (Ant to TV)
Receiver output: RF channel 3 (NTSC VHF)
Receiver RF output level: 5 to 15 dBmv
RF output impedance: 75 Ohms, type F connector
Noise figure: 10 dB
Receiver AGC: 20 dB
Receiving sensitivity: 1 mv/m minimum

Included in the package is 1 ea transmitter, 1 ea receiver, 2 ea wall
transformer/DC supplies, 2 ea little screw-in whip antennas, a brief
operating instruction sheet (no schematic), necessary cables with RCA plugs
and F fittings.

Each unit has an OFF-ON switch and a LED power indicator.

I plugged in the transmitter and verified it's putting out a signal around
921 MHz. The spectrum analyzer shows two sidebands about 5 MHz on either
side of the carier, and only about 15 dB down. Possibly these are the TV
audio sub-carriers. No other signal products were noticed between 10 MHz -
2.5 GHz.

73 de Jack

7. Re: [NETSIG:1343] Wal Marts 900 MHz rig

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sun, 04 Jun 1995 20:46:26 -0700
To: netsig@tapr.org
Message-ID: <199506050349.WAA21148@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>Found that our local Wal Mart had their "VCR Multiplier" marked down from
>$49.95 to $25.00 today. I see that my recollection as indicated in an
>earlier post, was off a little bit. They have a brand name of Popular
>Mechanics, rather than Popular Electronics. I purchased one and here's the
>info from the spec sheet:
>
>Frequency range: 906 - 926 MHz
>Frequency stability: plus or minus 500 KHz.
>Power rqmt: 15vdc @ 300 Ma (Tx and Rx, each)
>
>Transmitter input levels: video 1volt, audio 600mv - 1volt
>Video input impedance: 75 Ohms, RCA jack
>Audio input impedance: 58 KOhm, RCA jack
>
>Receiver has secondary input 40 - 860 MHz (Ant to TV)
>Receiver output: RF channel 3 (NTSC VHF)
>Receiver RF output level: 5 to 15 dBmv
>RF output impedance: 75 Ohms, type F connector
>Noise figure: 10 dB
>Receiver AGC: 20 dB
>Receiving sensitivity: 1 mv/m minimum
>
>Included in the package is 1 ea transmitter, 1 ea receiver, 2 ea wall
>transformer/DC supplies, 2 ea little screw-in whip antennas, a brief
>operating instruction sheet (no schematic), necessary cables with RCA plugs
>and F fittings.
>
>Each unit has an OFF-ON switch and a LED power indicator.
>
>I plugged in the transmitter and verified it's putting out a signal around
>921 MHz. The spectrum analyzer shows two sidebands about 5 MHz on either
>side of the carier, and only about 15 dB down. Possibly these are the TV
>audio sub-carriers. No other signal products were noticed between 10 MHz -
>2.5 GHz.

>
>73 de Jack
>

Today spent a little more time with the Wal Mart special Turns out the
secondary receiver input is really an A/B relay circuit which allows an
outside antenna to be activated to the TeeVee when the power to the 900 MHz
RX is off. The main portion of the receiver appears to be a UHF tuner, the
output of which is filtered to center plus or minus 2-3 MHz around 64 MHz,
the TV channel 3 frequency. The receiver has a "fine tuning" pot which
allows it to tune across the 900 MHz range.

Measured receiver sensitivity at 916 MHz was found to be 10 uV to yield a
signal 10 dB above the noise floor at the 64 MHz output port. The
transmitter has an "A" and "B" frequency switch on the rear panel. Position
"A" puts out a carrier centered on 921 MHz, and position "B" is 916 MHz.
Measured transmitter power output was only 1 mW (0 dbm). Each of the units
have a 7812 voltage regulator "on-board".

If this pair is to be used for data, the first priority would be to decide
how the data is to be detected from the receiver. Looks like there is
enough room on the receiver board to add a little more circuitry for this
purpose. The second priority would be to boost the transmitter output from
1 mW to at least 100 mW or more. Considering the wideband nature of the
receiver, its sensitivity really isn't too bad and front-end improvement
could be deferred unless required by link margin considerations..

73 de Jack

..

8. Re: [NETSIG:1344] Re: Wal Marts 900 MHz rig

From: James Brude <jbrude@TSO.Cin.IX.net>
Date: Mon, 5 Jun 1995 12:41:28 -0400
To: netsig@tapr.org
Message-ID: <199506051641.MAA16181@hTSO01.Cin.IX.net>
Rendered body type: text/plain

Dear Jack, thanks for taking the time to share your measurements and
assesment with the qrp-l group. I also have purchased the xmtr, rcvr.
combination. Here in Cincinnati it sells for $29.95.
I wish we could get a schematic for it. I would also like to be able to
boost the power to 100 mw or greater. They could be used for ATV also.
I have a spectrum analyzer also and noticed that signal seems to penatrate
the whole house well.
73 de Jim WB0SCD
jbrude@tso.cin.ix.net

9. OFFICE MEMO: Girl's Guide to Geek Guys (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 5 Jun 1995 12:11:35 -0500 (CDT)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199506051711.MAA18480@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

I just couldn't pass up the opportunity to pass this along to the group.

Cheers - Greg, WD5IVD

According to Miles Abernathy:
>From rcamama@ccwf.cc.utexas.edu Mon Jun 5 12:05:24 1995
Date: Mon, 5 Jun 1995 11:53:48 -0500
To: Humorous.Folks@Austin.Tex
Subject: OFFICE MEMO: Girl's Guide to Geek Guys

<forwarded>
A Girl's Guide to Geek Guys
By Mikki Halpin and Victoria Maat

So, your crush on the bass player from Vibrating Sandbox has finally

died a whimpering death and you're wondering where to go from here. All the sinister dudes are either dating a series of interchangeable high-school riot girls in baby doll dresses and an overdose of manic panic, or permanently shacked up with some bitter old lady who pays all the bills. Which will it be, a wifely prison or a humiliating one night stand? Into this void of potential mates comes a man you may not have considered before, a man of substance, quietude and stability, a cerebral creature with a culture all his own. In short, a geek.

Why Geek Dudes Rule

A) They are generally available.

B) Other women will tend not to steal them.

C) They can fix things.

D) Your parents will love them.

E) They're smart.

Where The Geek Dude Lurks

While they are often into alternative music, geek dudes tend not to go to shows too often. Instead you'll find them hanging out with their friends, discussing the latest hardware revolution or perfecting their Bill Gates impressions. You know how some people wear t-shirts with their favorite bands on them, thus showing that they went to certain shows? Well, geek dudes wear t-shirts with the logos of different software companies on them, thus showing that they are up on the latest, um, releases. A small, though convivial, rivalry may be detected here amongst the geek dudes. Try wearing one yourself and see if he strikes up a conversation.

Of course the best way to meet a geek dude is through the Internet. All geeks harbor a secret fantasy about meeting some girl in cyberspace, carrying on an e-mail romance in which he has the chance to combine an activity he is comfortable with, computing, with one he is very uncomfortable with, socializing. To many geek dudes, cyberdating is just an advanced form of some kind of video game, but they are frustrated by a lack of players. Their lack is your strength.

Imprinting

You might notice that these men harbor some strange ideas about how the world works and some particularly strange ideas about women. There is a reason for this. Because they've had limited interpersonal experience, geek dudes must look elsewhere for behavior models. Lacking a real world social milieu, geeks often go through a transference stage with such narratives, and try to model their interactions on them. Thus, certain media images and themes come to have an overly cathected, metaphorized reality to them, while the rest of us view such programming as mere entertainment. Case in point, our next topic...

The Trek factor

If you're not up on your Star Trek, you can forget about getting or keeping a geek dude. And I'm not just talking vintage-era Captain Kirk and Spock either. You've got to be up on your The Next Generation, your Deep Space Nine, your Babylon 5. Armed with your own knowledge of Federation policies, you can better gauge when and how to act. The sexual politics of Star Trek are pretty blunt: the men run the technology and the ship, and the women are caretakers (a doctor and a counselor). Note the sexual tensions on the bridge of the Enterprise: the women, in skin tight uniforms, and with luxuriant, flowing hair. The men, often balding, and sporting some sort of permanently attached computer auxiliary. This world metaphorizes the fantasies of the geek dude, who sees himself in the geeky-but-heroic male officers and who secretly desires a sexy, smart, Deanna or Bev to come along and deferentially accept him for who he is. If you are willing to accept that this is his starting point for reality, you are ready for a geek relationship.

Once You've Nabbed Him

Of course, catching that geek guy is only half the battle. Keeping him by your side is another story altogether. I was privileged to speak with Miss Victoria Maat, who not only got herself a geek guy but was also clever enough to marry him just a few short months ago. She interrupted her newlywed bliss to give us a few tips on the care and feeding of a geek man:

Geeks are sensitive and caring lovers and husbands. If you can hang with the techno-lifestyle, they make the best mates. They are the most attractive people, not flashy or hunky, but the kind who get cuter and more alluring over time (I told you she was a newlywed). Definitely give geeks a chance.

Geek Cuisine

Geeks tend towards packaged, junk foods since they prefer to work and think and aren't all that into cooking for themselves. Make sure that your geek understands that you are not merely a replicator, and provide him with home cooked food. A batch of chocolate chip cookies will let him know that you love him. You do have to monitor your geek for weight gain; however, remember that most of their days are spent sitting and staring at a monitor.

Geek Lifestyle

The geek dude has long work habits and tends to bring his work home with him. He seems permanently connected to his hard disk. You must at least appear interested in his work. Generally, a solid understanding of the computer is a must; if you cannot master this, you should at least be able to talk the talk. Remember most geeks are anal and they get stressed about details which appear insignificant. Be understanding, put on your best Deanna Troi face (see above) and empathize.

To relax, geeks love to play the latest computer games. Let him play Myst or Chuck Yeager's Air Combat for hours if he wants to. Act concerned if he's stuck or has just been ambushed by three MiGs. My geek loves to try to help people on the Internet who say that they are stuck in Myst. He comes up with clever riddles instead of directing them point blank. Geeks also like to go to sci-fi and Japanese animated movies, again, a basically harmless vent for your man.

Geek Buddies

Many geeks extend their work friendships into what they jokingly refer to as RL (Real Life, also known as "that big room with the ceiling that is sometimes blue and sometimes black with little lights"). The greatest thing about your geek's buddies is that you can feel secure in setting them up with your girlfriends. They may feel awkward around females at first, so don't overwhelm them. In time they will come out of their shell and realize that you are into the same things they are.

Post-It Note

I thank Victoria for the above advice. I must say that when she read my draft of the piece, before writing her section, she asked her husband which one he thought she was more like, Deanna or Beverly. Howard, the devil, immediately replied that he had always thought Victoria was actually most like Ensign Ro Laren, a cute character with a slight authority problem who is always in trouble (this is fairly apt). This exchange is interesting for several reasons:

Howard had already thought about who she was most like.

He could summon up characters from seasons past with ease.

Victoria actually knew who he meant.

Folks, I think this marriage will last.

One Last Thing

Because they have been so abused and ignored by society, many geeks
have gone underground. You may actually know some and just haven't
noticed them. They often feel resentful, and misunderstood, and it is
important to realize this as you grow closer to them. Don't ever try
to force the issue, or make crazy demands that he choose between his
computer and you. Remember, his computer has been there for him his
whole life; you are a new interloper he hasn't quite grasped yet.

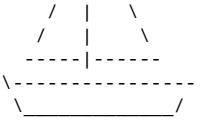
Geek dudes thrive on mystery and love challenges and intellectual
puzzles. Don't you consider yourself one? Wouldn't you like a little
intellectual stimulation of your own? We thought so.

10. Monitoring Network

From: paul@paccomm.com
Date: Mon, 05 Jun 95 16:27:20 UTC
To: netsig@tapr.org
Message-ID: <4594@paccomm.com>
Rendered body type: text/plain

Hi. There used to be a packet monitoring program by WB6??? some
time ago (1987?). This inspired me to write something similar
in the UK for the BBC Micro......
Anybody got a loaction on the Internet where I might find this
(in it's latest version) or something similar/newer?
I had a quick spy around the tapr ftp server, but couldn't find
the file name that would ring the right bells.....
Tnx.

_ _
Paul Evans, W4/G4BKI   paul@paccomm.com +1 (813) 874-2980
Fax:+1 (813) 872-8696 Views expressed here are not necessarily
those of PacComm. I don't surf the internet, I SAIL IT!
Cptn of S/V "Spindrift" (Catalina 36), Dunedin, FL.
PacComm Packet Radio Systems,Inc.,
4413 N.Hesperides St., Tampa, FL 33614-7618



11. Re: [NETSIG:1347] Monitoring Network

From: "Bob Nielsen" <nielsen@PrimeNet.Com>
Date: Mon, 5 Jun 1995 15:28:45 +0700
To: netsig@tapr.org
Message-ID: <199506052228.PAA17047@mailhost.primenet.com>
Rendered body type: text/plain

paul@paccomm.com writes:
> Hi. There used to be a packet monitoring program by WB6??? some
> time ago (1987?). This inspired me to write something similar
> in the UK for the BBC Micro......
> Anybody got a loaction on the Internet where I might find this
> (in it's latest version) or something similar/newer?
> I had a quick spy around the tapr ftp server, but couldn't find
> the file name that would ring the right bells.....

You might be thinking of MONAX, which is at ftp.tapr.org in
/tapr/software_lib/misc/monax.zip

73, Bob Nielsen, W6SWE
TAPR software librarian

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                                AX.25: w6swe@wb7tls.az.usa.noam

12. subscribe

From: tapr-lst@wa4bro.atl.ga.us (TAPR-LST)
Date: Tue, 06 Jun 95 09:44:00 -0400
To: netsig@tapr.org
Message-ID: <8AAC248.0190000118.uuout@wa4bro.atl.ga.us>
Rendered body type: text/plain

subscribe

13. Re: [NETSIG:1345] Re: Wal Marts 900 MHz rig

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 07 Jun 95 06:58:55 EDT
To: netsig@tapr.org

Message-ID: <15021573.1b60@ram.net>
Rendered body type: text/plain

Jack,

Here's a simple question about those boxes, from a consumer point of view...

The end on the TV stays on CH 3 (or 2 or maybe 4), But what about the other end?

Does it have a tuner builtin or does it also take a feed on ch 2, 3 or 4?

tom

14. Re: [NETSIG:1350] Re: Wal Marts 900 MHz rig

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Wed, 07 Jun 1995 08:57:52 -0700
To: netsig@tapr.org
Message-ID: <199506071601.LAA10991@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>Jack,
>
>Here's a simple question about those boxes, from a consumer point of view...
>
>The end on the TV stays on CH 3 (or 2 or maybe 4), But what about the other
>end?
>
>Does it have a tuner builtin or does it also take a feed on ch 2, 3 or 4?
>
>tom
>
Initially I thought the transmitter did have a channel 3 input, but no. It only has two RCA phono jack ports. One accepts a "standard" 75 ohm video baseband signal and the other is an audio input.

The spec sheet gives these applications:

"This sytem can be used with any electronic equipment that provides a video and/or audio output source as: VCR, camcorder, security camera, satellite receiver, some cable ready TVs, many computer monitors, etc."

73 de Jack

15. Re: Spread Spectrum on 219.

From: wb9mjn@uugate.wa7slg.ampr.org
Date: Sun, 11 Jun 95 08:31:37 mst
To: netsig@tapr.org
Message-ID: <4220@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

Hi,

  I m about a month behind in reading the list, so please bear with me, if these comments are duplicated elsewhere.

  On the synchonisation problem. I m not an expert, but i was under the impression that chip sets are available to do Spread Spectrum, synchrounising and everything. Am I wrong?

  On the usefulness of 10 Kb thruput, versus 56 KB thruput and higher non-spread spectrum. Well, the problem here is "are we building one link that never have any neighbors, or are we building a network of links". If we are building a single isolated radio link on 219 Mhz, yea, there are a world of other posibile radio systems that will provide all sorts of thruput better than 10 Kb. And we can use software technigues to deal with interferance. But, if the goal is to build a network of radio links, that can all coexist, we are back to the same old thruput problems I have written up in my ARRL CNC article. What will be the thruput of a 56 Kb simplex network, verus a 10 kb CDMA SS network?

  The 56 KB simplex network under full load will have the Aloha channel full load thruput. Additionally, since its simplex, a good rule of thumb is that the average TXD time is equal to the data time in the packet. So, real quick, and imprecise we have a 56 Kb /2 * 1/2e thruput (approx. 5 Kb) thruput.

  With full time synchronisation , we can achieve a 10 kb thruput with the spread spectrum technigue and noise imunity. Oops. Make that 5 kb thruput under full load in a system without CSMA. The problem is , that if a station

tries to send to another that is already sending to a third, u have collision. The first can t tell if the second is sending, becuase the second is using the code for the third. Under full load, my guess is that will have a 50 percent collision result, and reduce the thruput to 1/2. CSMA technigues are possible, however,something like a PL tone would probably work. Remember, this is only when the intended destination is already sending. And differs from 145.01 Aloha, since a station should be able to receive simultaneously from two stations that are hidden from each other (because the code will include aspects that are derived fromt he sender and receiver).

The 20 dB process gain pretty much confines use to coherent modem techingues, however. In order to have enuf margin for the modem to have sufficient BER.

Based on these real ruff ideas, it looks like spread spectrum should yeild the same thruput as 56 Kb, per network. But per band, it looks like 56 KB channelised in 100 Khz channels would be better. Until one considers all the noise problems in and around 220.0 Mhz.

73, Don. wb9mjn@uugate.wa7slg.ampr.org

16. High Speed (and other?) packet mailing lists?

From: Steve Stroh <strohs@halcyon.com>
Date: Thu, 15 Jun 1995 14:38:23 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.950615143418.17747B-100000@chinook.halcyon.com>
Rendered body type: text/plain

Having just gotten going with semi-graphical auto-download mailer software, I'm trying to resubsribe to Amateur Packet Radio related mailing lists.

The one's I'm aware of are the ones hosted by TAPR, ucsd.edu, and lantz.com/K4OKS.

Anyone have any other cool ones they'd like to point out?

Are the Gracilis and W3FFV High Speed mailing lists still around?

Thanks much!

Steve

Steve Stroh N8GNJ strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

17. Apple NII Band petition to FCC

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Thu, 15 Jun 1995 20:08:04 -0700
To: fccreg@tapr.org (TAPR FCC Regulatory List), tapr-bb@tapr.org, netsig@tapr.org, pcs@tapr.org, aprssig@tapr.org
Message-ID: <v02120d13ac069e3cd3ee@[204.118.182.22]>
Rendered body type: text/plain

TAPR Mailing Lists:

On May 24th, Apple Computer filed a petition for rulemaking with the FCC for a new unlicensed wireless data service called the NII Band. This action should be of interest to the amateurs as part of the spectrum that Apple requests for this band is currently allocated to the amateur radio service.

A short summary of the Apple petition follows:

Apple in their petition calls for the creation of a new band of frequencies for high capacity, unlicensed wireless data, the "NII Band". Specifically, Apple proposes that the Commission allocate 300 MHz of spectrum in the 5 GHz range, comprised of the 5150-5300 MHz band (which has been allocated throughout most of Europe for "HIPERLAN" unlicensed wireless local area networks) and the 5725-5875 MHz band (which currently is used by unlicensed Part 15 technologies; industrial, scientific and medical ("ISM") devices; and Amateur operators).

The essential characteristics of the NII Band are:

o Adequate bandwidth to support high-speed applications (up to 24 Mbps or more) and large numbers of users;

o "Part 16" operation in protected spectrum and in conformance with

an overarching set of technical rules, developed by the information
industry;

o   Equal access to the spectrum for all compliant devices and all
types of communications; and

o   Longer distance communications (10-15 km or more), creating new
possibilities for unlicensed community networks.

        In case you haven't been keeping up on current events, the amateur
service allocation in this area of spectrum is 5650-5925 MHz. So it would
appear that there is a conflict with this proposed new service and the
amateur radio service spectrum allocation.
        The FCC has assigned this petition RM-8653. Comments are due on
July 10th and reply comments are due by July 25th. If you are interested
in reading the full text of this petition, and you have WWW access, you can
find in on my website:

        URL: http://www.warpspeed.com/

If you don't, I will also be putting it up for anonymous ftp access by
Sunday 6/18 at ftp.warpspeed.com. There is not much time left for getting
comments into the FCC on this issue, so if you have any opinions one way or
another, you should get moving.

-- Dewayne

Dewayne Hendricks, WA8DZP ! CIS: 75210,10   AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204   ! AOL: HENDRICKS
Fax: (510) 770-9854   ! WWW: http://www.warpspeed.com/
----

18. Re: [NETSIG:1354] Apple NII Band petition to FCC

From: bruce@pixar.com (Bruce Perens)
Date: Thu, 15 Jun 95 21:39 PDT
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <m0sMTBN-0005z9C@mongo.pixar.com>
Rendered body type: text/plain

Are we supposed to show we can share the band like last time? Did Apple
even consult us this time?

        Thanks

        Bruce Perens
--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

19. Apple NII!

From: California Wireless Incorporated <cwi@rahul.net>
Date: Thu, 15 Jun 1995 21:46:04 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <199506160446.AA18215@foxtrot.rahul.net>
Rendered body type: text/plain

OM, have you done comments yet?

-Mike

>
>TAPR Mailing Lists:
>
>   On May 24th, Apple Computer filed a petition for rulemaking with
>the FCC for a new unlicensed wireless data service called the NII Band.
>This action should be of interest to the amateurs as part of the spectrum
>that Apple requests for this band is currently allocated to the amateur
>radio service.
>
>   A short summary of the Apple petition follows:
>
>   Apple in their petition calls for the creation of a new band of
>frequencies for high capacity, unlicensed wireless data, the "NII Band".

>Specifically, Apple proposes that the Commission allocate 300 MHz of
>spectrum in the 5 GHz range, comprised of the 5150-5300 MHz band (which has
>been allocated throughout most of Europe for "HIPERLAN" unlicensed wireless
>local area networks) and the 5725-5875 MHz band (which currently is used by
>unlicensed Part 15 technologies; industrial, scientific and medical ("ISM")
>devices; and Amateur operators).
>
>   The essential characteristics of the NII Band are:
>
>o   Adequate bandwidth to support high-speed applications (up to 24
>Mbps or more) and large numbers of users;
>
>o   "Part 16" operation in protected spectrum and in conformance with
>an overarching set of technical rules, developed by the information
>industry;
>
>o   Equal access to the spectrum for all compliant devices and all
>types of communications; and
>
>o   Longer distance communications (10-15 km or more), creating new
>possibilities for unlicensed community networks.
>
>   In case you haven't been keeping up on current events, the amateur
>service allocation in this area of spectrum is 5650-5925 MHz. So it would
>appear that there is a conflict with this proposed new service and the
>amateur radio service spectrum allocation.
>   The FCC has assigned this petition RM-8653. Comments are due on
>July 10th and reply comments are due by July 25th. If you are interested
>in reading the full text of this petition, and you have WWW access, you can
>find in on my website:
>
>   URL: http://www.warpspeed.com/
>
>If you don't, I will also be putting it up for anonymous ftp access by
>Sunday 6/18 at ftp.warpspeed.com. There is not much time left for getting
>comments into the FCC on this issue, so if you have any opinions one way or
>another, you should get moving.
>
>-- Dewayne
>
>
>--
>Dewayne Hendricks, WA8DZP ! CIS: 75210,10   AppleLink: D6547
>Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
>43730 Vista Del Mar   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
>Fremont, CA 94539-3204   ! AOL: HENDRICKS
>Fax: (510) 770-9854   ! WWW: http://www.warpspeed.com/
>--
>
>
>
>
>

20. Re: [NETSIG:1353] High Speed (and other?) packet mailing lists?

From: "Bob Nielsen" <nielsen@PrimeNet.Com>
Date: Thu, 15 Jun 1995 22:51:38 +0700
To: netsig@tapr.org
Message-ID: <199506160551.WAA17342@mailhost.primenet.com>
Rendered body type: text/plain

Steve Stroh <strohs@halcyon.com> writes:
>
> Having just gotten going with semi-graphical auto-download mailer
> software, I'm trying to resubsribe to Amateur Packet Radio related
> mailing lists.
>
> The one's I'm aware of are the ones hosted by TAPR, ucsd.edu, and
> lantz.com/K4OKS.
>
> Anyone have any other cool ones they'd like to point out?
You might consider:

nos-bbs (listserv@hydra.carleton.ca)
This is mainly a JNOS list, but other tcp/ip things get mentioned.

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                               AX.25: w6swe@wb7tls.az.usa.noam

21. Re: [NETSIG:1355] Re: Apple NII Band petition to FCC

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Fri, 16 Jun 1995 02:29:51 -0700
To: netsig@tapr.org
Message-ID: <v02120d17ac06f7e48264@[204.118.182.22]>
Rendered body type: text/plain

At 23:47 6/15/95, Bruce Perens wrote:
>Are we supposed to show we can share the band like last time? Did Apple
>even consult us this time?
>
Apple proposes that the amateur service share the spectrum with the proposed new service. The sharing arrangement would be similar to that which is now in effect in the 2390-2400 MHz band. In that portion of the band, the amateur service is primary and the Data-PCS service (Part 15, Subpart D) is secondary.
Apple and the ARRL for the sharing arrangement on 2390 MHz. They both made an appearance together at the FCC and said that both services could share the band together without any problems. As far as I know, no such deal was cut for any sharing arrangement before Apple submitted its petition this time to the FCC.

-- Dewayne

Dewayne Hendricks, WA8DZP ! CIS: 75210,10 AppleLink: D6547
Warp Speed Imagineering ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204 ! AOL: HENDRICKS
Fax: (510) 770-9854 ! WWW: http://www.warpspeed.com/
---

22. Re: [NETSIG:1356] Apple NII!

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Fri, 16 Jun 1995 02:30:00 -0700
To: netsig@tapr.org
Message-ID: <v02120d1dac06ff163367@[204.118.182.22]>
Rendered body type: text/plain

At 23:49 6/15/95, California Wireless Incorporated wrote:
>OM, have you done comments yet?
>
No. As head of the TAPR Regulatory Committee, I plan to have TAPR submit comments to the FCC on this issue. I also plan to submit comments as an individual.

-- Dewayne

Dewayne Hendricks, WA8DZP ! CIS: 75210,10 AppleLink: D6547
Warp Speed Imagineering ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204 ! AOL: HENDRICKS
Fax: (510) 770-9854 ! WWW: http://www.warpspeed.com/
---

23. Re: [NETSIG:1353] High Speed (and other?) packet mailing lists?

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 16 Jun 1995 09:06:25 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9506160954.A21822-0100000@gateway.utilpart.com>
Rendered body type: text/plain

You can also look at the ROSE list the address is
rose@overleaf.com

It not do much, then there will be a flurry of activity, but you may find some interesting stuff there.

Chuck Hast e-mail wchast@gateway.utilpart.com

HAST CONSULTING: Using radio for what it does best, Data Communications.

Running OS/2 WARP and LINUX on these boxes.

```
------------------------------------------------------------------------------
Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
------------------------------------------------------------------------------
```

24. NII & Other things...

From: California Wireless Incorporated <cwi@rahul.net>
Date: Fri, 16 Jun 1995 06:51:23 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <199506161351.AA27524@foxtrot.rahul.net>
Rendered body type: text/plain

```
>        No.  As head of the TAPR Regulatory Committee, I plan to have TAPR
>submit comments to the FCC on this issue.  I also plan to submit comments
>as an individual.

OK.   Are comments needed?  What does Jim say?  Can we just say "Yeah, go
Apple?" or do we need to deal with LoseForum's petition, too?


Also, just to continue to be your conscience, you said that if you didn't
hear anything by the 15th on SS, you'd take action...


-mac
>43730 Vista Del Mar       ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
                                           ^^^^^^^^^^^^^
Hey!  How about putting a lousy radio on 145.750 again, eh?  I mean, how
big a deal is this!!!!!!! ??????? !!!!!!!
```

25. Re: [NETSIG:1361] NII & Other things...

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Fri, 16 Jun 1995 07:50:27 -0700
To: netsig@tapr.org
Message-ID: <v02120d25ac0748b52a24@[204.118.182.22]>
Rendered body type: text/plain

```
At 9:08 6/16/95, California Wireless Incorporated wrote:
>>        No.  As head of the TAPR Regulatory Committee, I plan to have TAPR
>>submit comments to the FCC on this issue.  I also plan to submit comments
>>as an individual.
>
>OK.   Are comments needed?  What does Jim say?  Can we just say "Yeah, go
>Apple?" or do we need to deal with LoseForum's petition, too?
>
>
        Yes, comments are needed.  Every ham who can do so should read the
petition and decide if it makes sense and how sharing the spectrum with
such a service would effect continued use of that spectrum by the amateur
radio service.
        I did not post anything about the WINForum SUPERNET petition as
they did not ask for any spectrum that is allocated to hams.  WINForum
asked for 250 MHz for their new service from 5.1-5.35 GHz.

-- Dewayne


------------------------------------------------------------------------------
Dewayne Hendricks, WA8DZP ! CIS: 75210,10    AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar       ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204    ! AOL: HENDRICKS
Fax: (510) 770-9854       ! WWW: http://www.warpspeed.com/
------------------------------------------------------------------------------
```

26. Re: [NETSIG:1361] NII & Other things...

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Fri, 16 Jun 1995 07:50:29 -0700
To: netsig@tapr.org
Message-ID: <v02120d26ac074a227fd3@[204.118.182.22]>
Rendered body type: text/plain

```
At 9:08 6/16/95, California Wireless Incorporated wrote:
>
>Also, just to continue to be your conscience, you said that if you didn't
>hear anything by the 15th on SS, you'd take action...
>
```

I have. I talked to Rod Stafford, the acting President of the
League to help get things moving. The balls is in his court. Can't do
better than that...

>
>-mac
>>43730 Vista Del Mar   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
>   ^^^^^^^^^^^^^
>Hey! How about putting a lousy radio on 145.750 again, eh? I mean, how
>big a deal is this!!!!!!! ??????? !!!!!!!

Hey, what's the idea of posting this kind of crap on a public
forum. You talk about Bruce??? Look in the mirror!!

-- Dewayne

Dewayne Hendricks, WA8DZP ! CIS: 75210,10   AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204   ! AOL: HENDRICKS
Fax: (510) 770-9854   ! WWW: http://www.warpspeed.com/
----

27. Most recent X1J?

From: Douglas Fajardo <dfajardo@netcom.com>
Date: Fri, 16 Jun 1995 09:35:39 -0700 (PDT)
To: NETSIG <netsig@tapr.org>
Message-ID: <Pine.3.89.9506160910.A17223-0100000@netcom21>
Rendered body type: text/plain

A Simple question, if you please...
        What is the latest version of TheNet, and where can I get
 it from? (The UCSD site has release 2 - is there a release 3?)

 Thanks,
        Doug Fajardo
        WB6KNY

28. Re: [NETSIG:1364] Most recent X1J?

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 16 Jun 1995 10:28:52 -0700
To: netsig@tapr.org
Message-ID: <199506161733.MAA22157@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>
>   A Simple question, if you please...
>   What is the latest version of TheNet, and where can I get
> it from? (The UCSD site has release 2 - is there a release 3?)
>
> Thanks,
>   Doug Fajardo
>   WB6KNY
>
Last time I looked, *thought* I saw X1J4 at UCSD. If not, it's at
ftp.hereford.ampr.org /pub/hamradio/thenet. A file dealing with the
telemetry adaptor, hotncold.zip is in /pub/incoming, I believe.

Version 4 wipes out the buglets reported in earlier versions.

However I've experienced a problem with the PATCH.EXE program. Donno if
it's me or what, but when I go to program in shorter statements than what
previously existed in both the INFO and PASSWORD portions, the shorter
statements go in OK, but leftovers from the longer statements remain.

This problem isn't identified when using the PATCH menu to verify the new
statements.   It shows up after you burn the new chip. I've found it
necessary to follow up the PATCH pgm output with an editor so's to zero out
the remaining previous characters before burning the chip.

Again, this problem only exists if the new input is shorter than the
previous. The PATCH pgm works fine when completely overwriting the space
occupied by the old statements. Am I the only one noticing this?

73 de Jack

29. Re: [NETSIG:1365] Re: Most recent X1J?

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 16 Jun 1995 11:57:25 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950616115336.10169B-100000@acca>
Rendered body type: text/plain

On Fri, 16 Jun 1995, Jack Taylor wrote:

> Version 4 wipes out the buglets reported in earlier versions.
>
> However I've experienced a problem with the PATCH.EXE program. Donno if
> it's me or what, but when I go to program in shorter statements than what
> previously existed in both the INFO and PASSWORD portions, the shorter
> statements go in OK, but leftovers from the longer statements remain.
>

        Jack, when you make a "NEW" e-prom image you should use the
Original eprom image that came with the package...you DID save that
didn't you?

> This problem isn't identified when using the PATCH menu to verify the new
> statements.   It shows up after you burn the new chip. I've found it
> necessary to follow up the PATCH pgm output with an editor so's to zero out
> the remaining previous characters before burning the chip.
>
> Again, this problem only exists if the new input is shorter than the
> previous. The PATCH pgm works fine when completely overwriting the space
> occupied by the old statements. Am I the only one noticing this?
>
> 73 de Jack
>
>
        No I had that problem too. But hate to admit it....

73 de karl

---

30. [NETSIG:1365] Re: Most recent X1J? -Reply

From: Orville Beach <Orv@micom.com>
Date: Fri, 16 Jun 1995 11:41:36 -0800
To: netsig@tapr.org
Message-ID: <sfe16ea2.013@micom.com>
Rendered body type: text/plain

>>> Jack Taylor <n7oo@hereford.ampr.org> 06/16/95
09 40am >>>
>
>   A Simple question, if you please...
>   What is the latest version of TheNet, and where
can I get
> it from? (The UCSD site has release 2 - is there
a release 3?)
> > Thanks,
>   Doug Fajardo
>   WB6KNY
> Last time I looked, *thought* I saw X1J4 at
UCSD. If not, it's at ftp.hereford.ampr.org
/pub/hamradio/thenet. A file dealing with the
telemetry adaptor, hotncold.zip is in
/pub/incoming, I believe.

Version 4 wipes out the buglets reported in
earlier versions.
   However I've experienced a problem with the
PATCH.EXE program. Donno if it's me or what, but
when I go to program in shorter statements than
what previously existed in both the INFO and
PASSWORD portions, the shorter statements go in OK,
but leftovers from the longer statements remain.

This problem isn't identified when using the PATCH
menu to verify the new statements.   It shows up
after you burn the new chip. I've found it
necessary to follow up the PATCH pgm output with an
editor so's to zero out the remaining previous
characters before burning the chip.

Again, this problem only exists if the new input is
shorter than the previous. The PATCH pgm works
fine when completely overwriting the space occupied
by the old statements. Am I the only one noticing
this?

73 de Jack

No, I saw it, too. I happened to see it when the
binary image was loaded in the programmer, and used
the programmer's editor to zero the unwanted
characters out.

73 - Orv - wb6wey
orv@micom.com

31. Re: [NETSIG:1363] Re: NII & Other things...

From: bruce@pixar.com (Bruce Perens)
Date: Fri, 16 Jun 95 14:00 PDT
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <m0sMiUx-0005z9C@mongo.pixar.com>
Rendered body type: text/plain

From: dewayne@warpspeed.com (Dewayne Hendricks)

>   Hey, what's the idea of posting this kind of crap on a public
> forum. You talk about Bruce??? Look in the mirror!!
> -- Dewayne

What about Bruce? Let me guess - did you not like my alluding to the deal
you guys cut with Apple last time? I deliberately pointed that out because
it looks as if your friends at Apple have turned on you.

        Bruce
--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

32. Re: [NETSIG:1366] Re: Most recent X1J?

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 16 Jun 1995 15:03:02 -0700
To: netsig@tapr.org
Message-ID: <199506162207.RAA24712@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>
>> However I've experienced a problem with the PATCH.EXE program. Donno if
>> it's me or what, but when I go to program in shorter statements than what
>> previously existed in both the INFO and PASSWORD portions, the shorter
>> statements go in OK, but leftovers from the longer statements remain.
>>
>
>   Jack, when you make a "NEW" e-prom image you should use the
>Original eprom image that came with the package...you DID save that
>didn't you?
>
This is a good suggestion from Karl, k5di. But if you are burning a number
of system chips that have identical parameters coded in, it's quicker (and
safer for me) to use the first image and just add the appropriate changes.
It takes a finite amount of time to code up 5 or 6 chips at a whack and I
was hoping to hurry things along. I suppose it all boils down to a matter
of personal preferance.

However, thanks to discussion on this group, I think we all agree it would
be nicer if the PATCH.EXE would auto-erase the unwanted information. Can't
recall if this was also a problem with the HELP utility writer. To save on
node transmission time, I shortened the standard HELP annoucement down to a
simple "Type '?' for a list of node commands." Quite often even seasoned
users would enter a "H" thinking they would get the thenet plus HEARD list,
rather than the long X!J announcement. Image editing may have been
required in this area as well.

73 de Jack

33. Re: [NETSIG:1364] Most recent X1J?

From: shawnpat@sierra.net (Shawn Skinner)
Date: Fri, 16 Jun 1995 20:04:02 -0700
To: netsig@tapr.org
Message-ID: <199506170308.AA06613@diamond.sierra.net>
Rendered body type: text/plain

```
>
>       A Simple question, if you please...
>       What is the latest version of TheNet, and where can I get
> it from? (The UCSD site has release 2 - is there a release 3?)
>
> Thanks,
>       Doug Fajardo
>       WB6KNY

The most recent version is X1J ver 4.  The locations you can FTP
for it are:
oak.oakland.edu/pub3/hamradio/pc/digital/utils/tnx1j4.zip
 This is a 1.2 meg file that includes all parts of current release.

ftp.ucsd.edu/hamradio/packet/tcpip/incomming/ files..
 The files are Hotncold.zip, and any .zip with x1j4 in its name.
 5 files total, unless you also get the added descriptions (.txt).

Only reported bug so far is as Jack said, the help file changing
program leaves the old help excess in the .bin file.

73 de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner
```

34. never mind

From: bruce@pixar.com (Bruce Perens)
Date: Fri, 16 Jun 95 20:15 PDT
To: netsig@tapr.org
Message-ID: <m0sMoMX-0005z9C@mongo.pixar.com>
Rendered body type: text/plain

```
It appears that Dewayne was not the correct target for my attack regarding
the ARRL-Apple deal - that target is a good deal higher up.

        Bruce
--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .
```

35. Re: [NETSIG:1368] Re: NII & Other things...

From: "Brian A. Lantz" <brian@lantz.com>
Date: Sat, 17 Jun 1995 09:55:09 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9506170928.H32321-0100000@lantz.com>
Rendered body type: text/plain

```
On Fri, 16 Jun 1995, Bruce Perens wrote:

> From: dewayne@warpspeed.com (Dewayne Hendricks)
>
> >        Hey, what's the idea of posting this kind of crap on a public
> > forum.  You talk about Bruce???  Look in the mirror!!
> > -- Dewayne
>
> What about Bruce? Let me guess - did you not like my alluding to the deal
> you guys cut with Apple last time? I deliberately pointed that out because
> it looks as if your friends at Apple have turned on you.
>
>       Bruce
> --
> -- Attention Ham Radio Operators: For information on "Linux for Hams", read
> -- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
> -- an e-mail message containing the word "help" to info@hams.com .

AH! NETSIG is *ALIVE* again! Hams are fighting, and all is 'once again'
normal ;-)


------------------------------------------------------------
Brian A. Lantz     http://www.lantz.com     brian@lantz.com
```

```
REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

36. ISO document

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Sat, 17 Jun 1995 17:41:21 +0200
To: netsig@tapr.org
Message-ID: <199506171541.RAA19732@unix10.pressimage.fr>
Rendered body type: text/plain

Hi,

I am looking for the ISO document describing the multiple layers found in a
network. (in order to have a very precise definition of each layer)

Does someone know where to find this on the 'net ?

Thanks

```
                                    F1JKJ@planete.net
   From Laurent FERRACCI, F1JKJ     Fidonet 2:323/22.1
                                    Compuserve ID 100407,436
```

37. RE: [NETSIG:1369] Re: Most recent X1J?

From: roberts@ses6a.bt.co.uk
Date: Mon, 19 Jun 1995 08:41:34 +0100
To: netsig@tapr.org
Message-ID: <199506190743.CAA12091@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

OK on 'H'.

Originally, it was the other way round, and I got complaints from
European users who wanted it reversed !

Dave

38. RE: [NETSIG:1366] Re: Most recent X1J?

From: roberts@ses6a.bt.co.uk
Date: Mon, 19 Jun 1995 08:41:43 +0100
To: netsig@tapr.org
Message-ID: <199506190743.CAA12093@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

OOPS

Sorry Jack.

I'll correct that one. It certainly OUGHT to put the trailing null
there.

Once again, my apologies.

Dave

39. X1J4

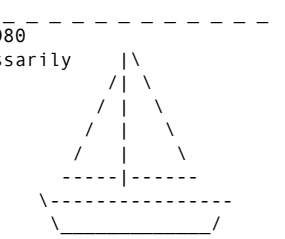
From: paul@paccomm.com
Date: Mon, 19 Jun 95 09:48:21 UTC
To: netsig
Message-ID: <5137@paccomm.com>
Rendered body type: text/plain

The "problem" with the patcher and long passwords replaced by short
ones giving a snail trail in the EPROM is one I've seen all along
with X1J2 and 4. However, it doesn't seem to cause a problem with
operation, it just eats up a few bytes (each time I've blown an
EPROM it works OK).

One bug has been identified in X1J4 - when first powered up it uses
the wrong SSID for the node! After the first nodes broadcast
(I think), it then sorts itself out - but allows you to use both
the bad SSID and the good one!!!!!

Otherwise, nothing else found so far.....   gud 'un Dave.....

_ _
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980
Fax:+1 (813) 872-8696 Views expressed here are not necessarily
those of PacComm. I don't surf the internet, I SAIL IT!
Cptn of S/V "Spindrift" (Catalina 36), Dunedin, FL.
PacComm Packet Radio Systems,Inc.,
4413 N.Hesperides St., Tampa, FL 33614-7618



40. Rev. 2 MFJ 1270B problem

From: rishmael@halnet.com (Rex H. Ishmael)
Date: Thu, 22 Jun 1995 14:54:22 -0500
To: netsig@tapr.org
Message-ID: <199506221959.AA06973@interlock.halnet.com>
Rendered body type: text/plain

I have a problem with an old Rev. 2 MFJ 1270B. It has run a Netrom
node for many years, the old chip died and the tnc driffed off so it
was taken out of service a year or so ago. I have been trying to get
it back up and have sent it to MFJ for repair and they say that it
operates fine with a MFJ chip in it.. I made the listed (in the X1J docs)
mod to run the X1J r4, but it wont work. appears to come on line, starts
the trans of ID but locks up in trans. or stutters and the PTT will flicker
at 5 to 20 sec intervals.. I have pulled the X1J mod and chip, put in a 208b
and it runs fine, check the radio link , also fine. Put the X1J back in
the socket and agn it will not answer the radio, or will not talk
to the other tnc or computer. Is there another mod for the older MFJ's
that some one has found the answer to this problem? I have a Rev. 3
of this tnc running with X1J (it is part of the pair) the mod done to
make the rev. 3 work is was the same done to the Rev. 2.. the rev. 3
has worked for 2 weeks, but the rev2 wont even start with the X1J...

==
Rex Ishmael, Environmental Engineer, Halliburton Energy Services
E-Mail:rishmael@halnet.com
Amatuer Mail: WD0AJG@WD0AJG.#SCOK.OK.USA.NOAM
Office=(405)251-2298 (hardly ever there, but leave a msg!)
==

41. [NETSIG:1370] Re: Most recent X1J?

From: jkbe@aloft.att.com (John_Bednar)
Date: Fri, 23 Jun 95 08:45:42 EDT
To: netsig@tapr.org
Message-ID: <9506231245.AA09546@zeus>
Rendered body type: text/plain

> Only reported bug so far is as Jack said, the help file changing
> program leaves the old help excess in the .bin file.

> 73 de Shawn, N7XBM.
> shawnpat@sierra.net Shawn Skinner

If you are talking about the program that changes the help text, I
don't think the statement above is correct. If you disagree and I
have overlooked something please send another message.

John, WB3ESS
j.k.bednar@att.com

42. Re: Most recent X1J?

From: shawnpat@sierra.net (Shawn Skinner)
Date: Fri, 23 Jun 1995 18:32:03 -0700
To: netsig@tapr.org
Message-ID: <199506240136.AA09718@diamond.sierra.net>
Rendered body type: text/plain

>
>> Only reported bug so far is as Jack said, the help file changing
>> program leaves the old help excess in the .bin file.
>
>
>If you are talking about the program that changes the help text, I
>don't think the statement above is correct. If you disagree and I
>have overlooked something please send another message.
>

>John, WB3ESS
>j.k.bednar@att.com
>

Hi John, I won't claim to dissagree with you as I have yet to make
a rom with the 4 version. Only going by the description
that N7OO Jack gave of his trouble and a couple of others
mentioned problem also. Per Jack the problem might also
be that he used a <cr> at the end of his help file.

73 de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner

43. Re: [NETSIG:1379] Re: Most recent X1J?

From: Jtaylor@usacec-osigw.army.mil
Date: Fri, 23 Jun 95 21:53:38 MST
To: netsig@tapr.org
Message-ID: <199506240520.AAA07952@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Clairification is in order regarding the utilities used to custom configure
the X1J for local node use. There are two of them. PATCH.EXE is the
one used for setting up the binary image to include callsign, password,
alias, and various parameters.

PATCH.EXE was the one I was referring to when I mentioned a problem with
longer statements in the password and info sections not being completely
cleared out when these areas are written with shorter statements.

SETHELP.EXE is used to change the statements for the HELP section. It had
been some time since I last had used this utility and I did make a comment
in my message about not being sure whether there was a problem here as well.

It's not necessary to actually burn any chips when setting up to use these
two utilities. One can experiment with setting up a customized eprom
image file simply by following the instructions provided with the X1J
distribution.

Since I opened my mouth and raised a question about the SETHELP.EXE utility,
thought I'd better clear the air tonight by making a couple of practice
runs. Here is what I found. SETHELP works nicely if the size of the
new HELP file is not more than three hundred bytes (or so) larger than
that allocated in the image. If the new file is too large by up to
approximately this amount, the utility gives a nice statement telling you
how many bytes needs to be reduced.

If your new HELP file is less than the allocated space, SETHELP announces
how many bytes have been used and how many bytes of space remain. I DID
NOT see a problem with "residuals" from previous HELP statements. The
utility does a nice job.

However, when I typed up the first sample HELP file to use with SETHELP
tonight, my computer locked up upon program execution and had to be
rebooted. Turns out this happens if you get carried away and make up a
HELP file that's more than 400-500 bytes larger than the eprom space. I
found by experimenting that there's a "ragged edge" where this occurs as
there was a point where gargage characters would appear on the screen
prior to a file size sufficient to lock up the computer.

There's no doubt that I'm probably the only one in the world to get into
this predicament and the SETHELP utility works fine in its intended
environment. I'm sure everyone else will experience no problems with it!

73 de Jack

44. X1J node locks

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sat, 24 Jun 1995 12:02:09 -0300
To: netsig@tapr.org
Message-ID: <199506241502.MAA01718@bud.cycor.ca>
Rendered body type: text/plain

While X1JR4 has lots of nice new features there is one feature we used a lot
in TN2.08B that doesnt seem to work in X1J. That is the node lockout using the
R2/R3 command. We used it to keep certain nodes from our tables.
The ACL command is not quite the same. It can control some things but still
will not prevent a rouge node from appearing in your tables.
Anyone have a work-around for this?
73 - Ron

ve1aic@ve1aic.pe.can.noam

45. HELP!! needed with MFNOS (routing?)

From: kb8ufp@hamgate.merit.edu
Date: Sat, 24 Jun 95 22:46:31
To: netsig@tapr.org
Message-ID: <3615@hamgate.merit.edu>
Rendered body type: text/plain

Hi... Basically I need help setting up my routing? information...
QTH is Ypsilanti MI. In my autoexec.nos there is a line that reads:
route add default ax0 [44.102.1.1]   Is this the line in which
I should put the nearest TCP/IP station? I know that the above is merit on
145.070   should I use that frequency? Or is there another frequency
dedicated to tcp/ip that I should use.   I have been able to connect via
both telnet and ftp to n8yau on 145.070 using either 44.102.1.1 or
44.102.1.20 (n8yau)   But thats it... I haven't been able to connect to any
other stations... I have been using 44.128.0.10 as my IP address ("try out
addresses in domain.txt") Is there a station dedicated to routing TCP/IP
packets? or will the nearest tcp/ip mailbox do?
TNX in adv. ks 73 de KB8UFP

46. Re: [NETSIG:1382] HELP!! needed with MFNOS (routing?)

From: "Bob Nielsen" <nielsen@PrimeNet.Com>
Date: Sat, 24 Jun 1995 23:11:00 +0700
To: netsig@tapr.org
Message-ID: <199506250611.XAA03355@mailhost.primenet.com>
Rendered body type: text/plain

kb8ufp@hamgate.merit.edu writes:

> Hi... Basically I need help setting up my routing? information...
> QTH is Ypsilanti MI. In my autoexec.nos there is a line that reads:
> route add default ax0 [44.102.1.1]   Is this the line in which
> I should put the nearest TCP/IP station? I know that the above is merit on
> 145.070   should I use that frequency? Or is there another frequency
> dedicated to tcp/ip that I should use.   I have been able to connect via
> both telnet and ftp to n8yau on 145.070 using either 44.102.1.1 or
> 44.102.1.20 (n8yau)   But thats it... I haven't been able to connect to any
> other stations... I have been using 44.128.0.10 as my IP address ("try out
> addresses in domain.txt") Is there a station dedicated to routing TCP/IP
> packets? or will the nearest tcp/ip mailbox do?
> TNX in adv. ks 73 de KB8UFP

DON'T try to get any network connectivity with the 44.128 address.
That is only supposed to be used for testing. Get a real ip address
from your coordinator. You will have to contact local stations to
get them to put you in their domain.txt files. You can probably get
a domain.txt from one of them and use it.

Basically, the rule is: See what the other local stations are doing
and follow suit. Frequencies and routing procedures vary in
different areas. Try the sysop at Merit as a starting point.

Bob

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                               AX.25: w6swe@wb7tls.az.usa.noam

47. Re: [NETSIG:1381] X1J node locks

From: shawnpat@sierra.net (Shawn Skinner)
Date: Sun, 25 Jun 1995 07:04:30 -0700
To: netsig@tapr.org
Message-ID: <199506260700.AA04691@diamond.sierra.net>
Rendered body type: text/plain

>While X1JR4 has lots of nice new features there is one feature we used a lot
>in TN2.08B that doesnt seem to work in X1J. That is the node lockout using the
>R2/R3 command. We used it to keep certain nodes from our tables.
>The ACL command is not quite the same. It can control some things but still
>will not prevent a rouge node from appearing in your tables.
>Anyone have a work-around for this?
>73 - Ron
>ve1aic@ve1aic.pe.can.noam
>

Hi Ron,
While I strongly dissagree with "lockouts" of call signs from nodes
(having been on the recieving end in a *group* of folks) the ACL has
worked with X1J2 very well. I haven't used the X1J4 yet, so if the
command doesn't work, this *may* be a bug.

I use the ACL 4 to *ignore* the other call on the node broadcast, which
then allows connection on a *down link* (level 4)if an event requires it
and still allows you to monitor from the Mheards.

For a total "lockout" the ACL would be 127 which would include all
ssid's, or 63 if you include the ssid in the call you mark.
63, includes bar of level 4,3,2 in/out and ignores the nodes broadcast
directly.

If you really hate the fact that the node may show up on the nodes
list as broadcast from third node, then lock the node quality down
below your minimum.

Don't forget to set the ACL mask to your highest table value.

Also, tho TNP208 and 210 were very good products, the R3 and R4 did
not prevent the "lockout" call from using your node on level 2 via
another node, nor did most realise that you also had to R3/4 the
alias name.

IMO: Lockouts are a poor substitute for communication,
     in a hobby/service that is founded on communication.

73 de Shawn, N7XBM. Nodeop Elko ARC.
shawnpat@sierra.net Shawn Skinner

48. Re: [NETSIG:1381] X1J node locks correction.

From: shawnpat@sierra.net (Shawn Skinner)
Date: Sun, 25 Jun 1995 07:09:47 -0700
To: netsig@tapr.org
Message-ID: <199506260710.AA04932@diamond.sierra.net>
Rendered body type: text/plain

Sorry I used "R3/4" when it should have been: R2/3
meaning Routes list 2 and Routes list 3 of TNP208/210 node ware.
shawnpat@sierra.net Shawn Skinner

49. RE: [NETSIG:1385] Re: X1J node locks correction.

From: roberts@ses6a.bt.co.uk
Date: Mon, 26 Jun 1995 09:43:50 +0100
To: netsig@tapr.org
Message-ID: <199506260844.DAA28083@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Ah,

OK, if the consensus is that it is needed, I'll haver a look
at adding it.

Have i got it right...

"If any station performs a node broadcast that has as one of its
destinations, a node that is deemed unwanted, for routing or
other reasons, do not put the undesirable station in the node
list whilst accepting all other acceptable destinations in the
node broadcasts"

So if node A broadcasts destinations to B,C and D, and C is deemed
to be unwanted, accept routes to B and D via A but do not attempt
to add the route to node C.

Is this the omission that is wanted ? Is it correct that you can do
all the other things you need with current ACL operation.

Dave

P.S. I'm confused - is it sethelp or patch or both that need change
to add nulls to the end ?

50. RE: [NETSIG:1381] X1J node locks

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Mon, 26 Jun 1995 12:32:47 -0300

To: netsig@tapr.org
Message-ID: <199506261532.MAA19170@bud.cycor.ca>
Rendered body type: text/plain

>What condition causes the appearance of the nodes ?
>
>I'll try to include a fix for you.
>
>Dave
>
>
Without getting into the Politics of such situations, the usual case is
where Node
info is carried thru the Network and we don't want it showing in the node
tables
beyond a certain point.
An example might be a (personal) BPQ node that is just taking up space in
Network tables.

Anyway, the ACL will work on neighbour nodes/broadcasts but nodes coming
from afar will still show up regardless of ACL. (At least thats what appears
to happen)
 I don't necessarily want to keep anyone from connecting
to this node, just that I don't want it broadcast all over the Network.
The R2 command in TN2.08B did a good job of this, the said node was no
longer visible beyond that point.
(I know it still took up space in that table and that there was a bypass at
level 2,
 but it worked for this purpose.)

Locking said node at a low quality and forced Obs count might work. I'll try
that, but it
would still be "visible' in that table. If that works it least it would stop the
propogation of the node info in question which is what we want to do.

73 - Ron
VE1AIC

51. Source of 10Mhz Zilog Parts

From: zephd@iquest.net (Dave Zeph)
Date: Mon, 26 Jun 95 12:53 EST
To: netsig@tapr.org
Message-ID: <m0sQILg-000BdwC@dorite.iquest.net>
Rendered body type: text/plain

I'd like to order the parts needed to upgrade a number of TNC-2 to operate
at 9.8Mhz. I know a 10Mhz parts kit is available; however I'd like to try
to reduce the overall project costs by purchasing the parts myself.

The crystal and EPROM are no problem, but I don't know of sources for the
10Mhz CMOS Z80 CPU and SIO chips.

I found one catalog that listed the Zilog chips, but under their Part Number
scheme. When I asked the person if he would go look at the chips to
determine which was the 10Mhz variety, he admitted they didn't have any in
stock anyway!

Perhaps I'm just not accumulating the right catalogs these days. Can anyone
recommend where I can purchase the 10Mhz Z80 parts?

Thanks and 73 ---> Dave

****
Dave Zeph, W9ZRX
Home   : (317) 896-3876
FAX/Data : (317) 867-1809
E-Mail   : zephd@iquest.net

52. Re: [NETSIG:1384] Re: X1J node locks

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 26 Jun 1995 10:59:06 -0700
To: netsig@tapr.org
Message-ID: <199506261805.NAA00429@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

SNIP!
>Also, tho TNP208 and 210 were very good products, the R2 and R3 did
>not prevent the "lockout" call from using your node on level 2 via
>another node, nor did most realise that you also had to R2/3 the

>alias name.
>
>IMO: Lockouts are a poor substitute for communication,
>   in a hobby/service that is founded on communication.
>
>73 de Shawn, N7XBM. Nodeop Elko ARC.
>shawnpat@sierra.net Shawn Skinner

Ideally lockouts should NOT be used. However, in the real world once in a great while, a disruptive individual appears who enjoys crashing the network. No amount of reasoning and discussion will bring relief. Lockout capability can be a useful tool in these instances. Lack of space in the 27256 eprom prevented the addition of a 2nd lookup table to make the lockout function in TNP totally effective.

Subject change. While talking features for X1J, I'd like to make a pitch for Dave to add an index of link quality. By this, I mean a stat that tells us how good the link is between neighbor nodes. The original netrom approach was to arbitrailly define a circuit in terms of a set of numbers between 0 - 255. For example the familar "192" seen in response to a ROUTES command is simply a convention to describe the path quality between a point-to-point VHF 1200 baud radio link occupied with hidden transmitters. The "192" indicates a probablilty of 75 percent in getting any particular packet across the link (192 divided by 255, where 255 is the value to describe a collision-free link).

This definition is a static approach. The NodeOp supposedly spends quite a bit of time monitoring the traffic between any two links and makes a determination as to the average percentage of successful packet transmission. He then multiplies this percentage by 255 and enters this value into the node parameter string as the radio path "quality" for that link.

In real life, most NodeOp's simply enter the "standard number" for that type of path, and let it go at that. For the most part, this works out reasonably well.

However, since the overall network routing mechanisim in thenet relies on the accuracy of each individual path quality setting, it's fairly important these numbers reflect (as close as possible) actual link conditions. it would be desireable to have each link compute (and set) path quality on a dynamic basis. (Path quality can be affected from time-to-time by a number of factors. On a link occupied with hidden transmitters, packet collisions will vary, depending upon the activity. Propagation effects can change from ideal to poor during certain periods. Site intermod effects can creep up as more and more transmitters are added at a site. Performance of packet radio gear/transmission line/antennas can deteriate over time.)

Thus it would be handy for the NodeOp to have a stat available which he could use as a benchmark over a period of time for comparision purposes. Otherwise, he now mostly relies on user complaints...some of which can be pretty non-specific.

For several years now the G8BPQ nodeware has had a ROUTES * feature. What this does is to reveal the "percentage of retries" over the most recent time slot, between G8BPQ and neighbor nodes. This is a VERY useful stat for NodeOps and network travellers alike. At a glance, one can tell what the current link path quality is between a neighbor. This information can be incredibly useful when problems are encountered in setting up a new radio link, or in making modifications to an existing link.

It would seem a short step in modifying the "percentage of retries" calculation so as to automatically update the neighbor node path quality value. One would still retain the 0 - 255 path quality numbering convention, except now the path quality link values would by dynamic, (reflecting actual conditions) instead of static.

In theory, this should enhance the performance of overall network routing since end to end connections are routed via the circuit with the highest path quality number. For those primarily interested in IP routing, this proposed feature would also be a benefit in diagnosing link problems.

73 de Jack

53. Re: [NETSIG:1388] Source of 10Mhz Zilog Parts

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Mon, 26 Jun 1995 15:53:32 -0700 (PDT)
To: netsig@tapr.org

Message-ID: <Pine.SUN.3.91.950626155252.29222A-100000@africa.connectus.com>
Rendered body type: text/plain

PacCom sells the entire 10 Mhz upgrade kit for the TNC-2 TNC.....

****
Richard Hallman Internet: ki3v@connectus.com
11870 Heartpine St IP Address:
Reno Nevada 89506 Amateur Radio: KI3V
****

On Mon, 26 Jun 1995, Dave Zeph wrote:

> I'd like to order the parts needed to upgrade a number of TNC-2 to operate
> at 9.8Mhz. I know a 10Mhz parts kit is available; however I'd like to try
> to reduce the overall project costs by purchasing the parts myself.
>
> The crystal and EPROM are no problem, but I don't know of sources for the
> 10Mhz CMOS Z80 CPU and SIO chips.
>
> I found one catalog that listed the Zilog chips, but under their Part Number
> scheme. When I asked the person if he would go look at the chips to
> determine which was the 10Mhz variety, he admitted they didn't have any in
> stock anyway!
>
> Perhaps I'm just not accumulating the right catalogs these days. Can anyone
> recommend where I can purchase the 10Mhz Z80 parts?
>
> Thanks and 73 ---> Dave
>
> **********
> Dave Zeph, W9ZRX
> Home   : (317) 896-3876
> FAX/Data : (317) 867-1809
> E-Mail   : zephd@iquest.net
>
>
>

54. Re: [NETSIG:1389] Re: X1J node locks

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Mon, 26 Jun 1995 16:18:23 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950626155922.29222B-100000@africa.connectus.com>
Rendered body type: text/plain

With the complexity of networks now, a certain amount of exclusion or
"LOCKOUTS" are required for good network management. Hiding the backbone
nodes, Not allowing users to access certain ports on a multi-port
community backbone system...ect. The R3 and R2 commands were nice in TNP
stuff, and I hope to see it back in the X1J firmware. Lockouts are not
always a slap in the face to users, but used for network management and
to guide users along a complex backbone multi-port system.

   My question....Many BBS's here Locally are running MSYS. These BBS's
are also running the NODE and BBS enabled. These BBS's do not offer any
other type of gateway'ing thru their NODES. My question or problem is
that the MSYS BBS's are sending out twice the amount of node broadcasts
that is really needed. This can also be done with running BPQ as the
front end with FBB, but seems like most FBB SYSOPS run the NODE off in
BPQ. Is there really a reason to node broadcast the NODE AND the BBS
alias on a dedicated BBS user input?? Seems to me its a waste of
bandwith, when just connecting to the BBS would do the job.

True or False?? Ive heard this same complaint several other times but
never has it made it to NETSIG. Ill be the first to get slammed! ha

Thanks!
    Rich...FBB Sysop, X1J Sysop, DX Cluster Sysop, 9600/19.2K Network
Sysop....ect. I think Im too busy......

****
Richard Hallman Internet: ki3v@connectus.com
11870 Heartpine St IP Address:
Reno Nevada 89506 Amateur Radio: KI3V
****

55. Spirit II and KISS EPROM??

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Mon, 26 Jun 1995 19:01:35 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950626185708.1273A-100000@africa.connectus.com>
Rendered body type: text/plain

Was wondering if anybody has had any luck in running a KISS Eprom
in a PacComm Spirit II Tnc??? If so.....Which make and model
of KISS Eprom did you use?? I have had a hard time getting one to
work. Works fine in the TNC-2 (1270 series). Im using the KISS
command in the PacComm firmware right now, but would rather use the KISS
eprom in case of drop-outs. (Yes, the Eprom is 150ns or faster...)

   Thanks! Rich KI3V/7

****
Richard Hallman Internet: ki3v@connectus.com
11870 Heartpine St IP Address:
Reno Nevada 89506 Amateur Radio: KI3V
****

56. Re: [NETSIG:1392] Spirit II and KISS EPROM??

From: "Brian A. Lantz" <brian@lantz.com>
Date: Tue, 27 Jun 1995 09:06:01 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9506270946.o4865-0100000@lantz.com>
Rendered body type: text/plain

On Mon, 26 Jun 1995, Richard Hallman KI3V/7 wrote:

> Was wondering if anybody has had any luck in running a KISS Eprom
> in a PacComm Spirit II Tnc??? If so.....Which make and model
> of KISS Eprom did you use?? I have had a hard time getting one to
> work. Works fine in the TNC-2 (1270 series). Im using the KISS
> command in the PacComm firmware right now, but would rather use the KISS
> eprom in case of drop-outs. (Yes, the Eprom is 150ns or faster...)

I've had no problems with *any* TNC-2 eproms in *any* SPRINT/SPIRIT. You
MUST, though, set the jumpers properly. These jumpers determine whether
the eprom using bankswaping, the ram uses bankswapping, where some of the
control lines go, etc. When in doubt, check the manual. ;-)

The *problem* is that the SPIRIT can be several *different animals* due
to these jumpers, and the standard eproms from PacComm make use of some
of these 'special' features.

Brian A. Lantz http://www.lantz.com brian@lantz.com

REAL PORTION of Microsoft Windows code:

```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

57. Re: [NETSIG:1389] Re: X1J node locks

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Wed, 28 Jun 1995 10:43:56 -0300
To: netsig@tapr.org
Message-ID: <199506281343.KAA12708@bud.peinet.pe.ca>
Rendered body type: text/plain

[snip]
>
>In real life, most NodeOp's simply enter the "standard number" for that type
>of path, and let it go at that. For the most part, this works out
>reasonably well.
>
>
>Thus it would be handy for the NodeOp to have a stat available which he
>could use as a benchmark over a period of time for comparision purposes.
>Otherwise, he now mostly relies on user complaints...some of which can be
>pretty non-specific.

>
>For several years now the G8BPQ nodeware has had a ROUTES * feature. What
>this does is to reveal the "percentage of retries" over the most recent time
>slot, between G8BPQ and neighbor nodes. This is a VERY useful stat for
>NodeOps and network travellers alike.

I agree with Jack that this is a very usefull tool and would like to see it
included
in new features for X1J. However I dont think it would be a good idea to
"automatically update" a route quality.
While some Sysops use default 192 for routes, those that have layered
Networks use varying route values to "steer" the Networks.
So if a dynamic route feature was created it must have an On/Off parameter
as well.

73 - Ron

58. Re: [NETSIG:1391] Re: X1J node locks

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Wed, 28 Jun 1995 10:44:04 -0300
To: netsig@tapr.org
Message-ID: <199506281344.KAA12718@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>   My question....Many BBS's here Locally are running MSYS. These BBS's
>are also running the NODE and BBS enabled. These BBS's do not offer any
>other type of gateway'ing thru their NODES. My question or problem is
>that the MSYS BBS's are sending out twice the amount of node broadcasts
>that is really needed. This can also be done with running BPQ as the
>front end with FBB, but seems like most FBB SYSOPS run the NODE off in
>BPQ. Is there really a reason to node broadcast the NODE AND the BBS
>alias on a dedicated BBS user input??   Seems to me its a waste of
>bandwith, when just connecting to the BBS would do the job.
>

Almost ALL of our FBB BBS run the BPQ node with a "#" Alias. Thus the BPQ
node does
not propogate beyond the LAN or back-bone. If the BBS does not have multi-ports
or gateway functions then it shouldnt have the Node enabled as it serves no
purpose
otherwise.
73 - Ron
ve1aic

59. RE: [NETSIG:1389] Re: X1J node locks

From: roberts@ses6a.bt.co.uk
Date: Thu, 29 Jun 1995 09:23:59 +0100
To: netsig@tapr.org
Message-ID: <199506290824.DAA02015@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

OK,

I'll read through in detail tonight the proposals.

I heeded your last request Jack, and have coded (but not
yet tested) the following. How about this for a starter
for ten for link stats ?

The heard list structures have been extended to capture
additonal statistics.

The code will capture additional statistics as follows.
For every packet received or sent, the heard list
structure for that station (if there is one) will
be updated to record the following :

        I frames sent to that station
        I frames received from that station
        UI frames sent to that station
        UI frames received from that station
        retries on the link
        Link failures

If you type MHEARD *, then it will print the alternative
listing, which goes something like this...

CALLSIGN PACKETS PORT TIME   Isent Ircvd UIsent UIrcvd Retries Fails

```
G9BF-15   4356    0   00:00      22     34      0      0      1       3
GB7ABC    10000   0   00:01    2400   3200     10     43     50       0

etc

>From this, individual link performance may be seen.

The performace hit on receive stats is minimal. For xmit, it means
searching the heard list again for packets sent. Not too onerous.

Question :

Is this useful, and are other stats needed ? I did toy with doing
things like total recvd and total sent, but it adds little than
cannot be ascertained from the other stats.

Incidenatlly, the same command, with reduced stats can be used for
Level 3 and it is also possible to extend it to an L4mh command
too.


If this would be useful, I can get out another version fairly
soon. It will also contain the SLIP drivers ( I hope ). I may
need to squeeze the code a bit again.

I will also take the opportunity to add a ROM checksum facility
to detect when a new ROM is fitted and do a coldstart, and
fix any bugs in patch.exe or related programe.

Any other ( SMALL ) changes - electronic shoehorns greatly
appreciated.

Dave
```

60. Re: [NETSIG:1396] Re: X1J node locks

```
From: shawnpat@sierra.net (Shawn Skinner)
Date: Thu, 29 Jun 1995 04:10:33 -0700
To: netsig@tapr.org
Message-ID: <199506300411.AA00735@diamond.sierra.net>
Rendered body type: text/plain
```

```
Hi Dave,
You can count me as one of your fans.. hihi.
Though I haven't as yet felt the need for the stats that Jack
has asked for, I can see that they would be a benifit.


>If this would be useful, I can get out another version fairly
>soon. It will also contain the SLIP drivers ( I hope ). I may
>need to squeeze the code a bit again.

SLIP drivers YES!

>I will also take the opportunity to add a ROM checksum facility
>to detect when a new ROM is fitted and do a coldstart, and
>fix any bugs in patch.exe or related programe.

Don't really see that this is needed.  Since the cover is off
when the rom is changed, pulling the battery just needs to be
a part of the routine.  Granted that I have forgotten to pull
the battery once.  It seems with the limited space available
that a rom change auto-sense is not priority.
Then again a ZIF rom socket on the cover might be an idea?
;-)

>
>Any other ( SMALL ) changes - electronic shoehorns greatly
>appreciated.
>
>Dave

Great product!

What about a back-bone optimised version, possibly with ability
to compress the transferred data (if not allready compressed) when
linked to a similar node?
I know, you asked for small changes, shucks!
```

73 de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner

61. X1J4 new EPROM fits..

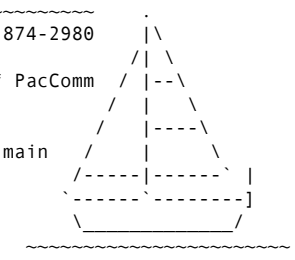
From: paul@paccomm.com
Date: Fri, 30 Jun 95 08:38:41 UTC
To: netsig
Message-ID: <5811@paccomm.com>
Rendered body type: text/plain

Wow. You wouldn't believe how many people WON'T read the manual.....
No end of people just fit a new EPROM and go. PLEASE incorporate
the checksum on the memory check to get rid of this perpetual
problem.

(Notice I said WON'T as opposed to DON'T above)

~~~~~~
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980
Fax:+1 (813) 872-8696
Views expressed here are not necessarily those of PacComm
Don't surf the net, SAIL it!
Captain of S/V "Spindrift", Dunedin, FL.
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems
4413 N. Hesperides St., Tampa, FL 33614-7618



62. Re: [NETSIG:1396] Re: X1J node locks

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 30 Jun 1995 11:28:33 -0700
To: netsig@tapr.org
Message-ID: <199506301835.NAA20871@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Daves first cut at link performance stats looks good to me! I'd not
considered providing link data for the USERS, but I can see where they would
benefit, specially when trying to determine the source of problems.

Would suggest somewhere in the MH * display of having the retries indicated
as a percentage. While the math is simple enough, it's a lot easier for me
to quickly focus on the percentage value.

The ROM checksum feature would certainly make eprom installation go
smoother. A great idea!

Should "auto path quality" ever come into being, agree that this should be a
NodeOp option as to whether it's enabled or not.

Just looked at our local G8BPQ mountain-top node. The NodeOp has set the
path quality values to his neighbors based on what he no doubt feels is a
reasonable assumption for each. In looking at the retry percentage and
multiplying the inverse of that times 255, there's an interesting disparity
between the assumed values for each of the six active neighbors and the
actual path values.

In two cases, the path quality has been set significantly below the value
which the retry rate indicates that it should be. Both of these paths are
quite long and it's natural to assume they'd rate a low path quality value.
However, this appears to not be the case. Because of the lower fixed
values, traffic beyond these neighbor destinations, is forced to go through
a longer secondary system.

Another circuit is a 220 MHz half-duplex 9k6 142 mile link. The radios on
both ends are 10 watt Midland 13-509s and with the early K9NG modems. During
the initial installation phase, there were serious questions as to how
reliable this long path would be. Also this combination of radio and modem
is such that one wouldn't have the highest confidence in. However, year
after year, the retry rate over this link varies from 0 to 2% or so! As a
result of actually seeing the low retry rate, a high degree of confidence in
this particular link has been established.

I guess what I'm saying here is that having the link retry rate available is
usefull for several reasons. Once NodeOps start focusing in on what their
actual system efficiencies are, they will be better able to make cost versus
retry percentage decisions on upgrades.

In the example above, I also attempted to make a case for the generation of
~~~~~~

automatic path quality values based on individual link retry rates. Of course, there may be some "gotchas" in doing so, but the goal is to improve overall network routing efficiency. Hopefully this theme will initiate group discussion on the topic.

73 de Jack

63. Re: [NETSIG:1377] Rev. 2 MFJ 1270B problem

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 30 Jun 1995 19:07:42 -0700
To: netsig@tapr.org
Message-ID: <199507010214.VAA24473@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>I have a problem with an old Rev. 2 MFJ 1270B. It has run a Netrom
>node for many years, the old chip died and the tnc driffed off so it
>

Not sure what you mean by "drifted off", perhaps the modem tones? Anyway two things come to mind. Sounds like the Z-80 CPU is struggling to handle the extra work load of the X1J.

First, some versions of the MFJ circuit board handled the clock speed jumper a bit differently. I'd check to make sure the 4.9 MHz clock speed was *really* enabled. The X1J requires the "faster" clock rate whereas the 208B's could get by on the slower clock position.

Second, 32K of RAM is essential for X1J operation, but I'd assume the 1270B versions all came equipped with that. I do know I've upgraded the older 1270 versions from 16 to 32K.

If none of the above, try a swap of the Z-80 and SIO out of a TNC that does work OK with the X1J, as one of these may be slow or tired. If not here, the only other easy subsitution would be the 32K ram chip. Following that, I'd then check the +5 volt regulator output for smoothness and rated voltage with a scope. Over time, these regulators have been known to fall below their specs, OR one of the regulator filter caps could be going faulty.

73 de Jack

July 1995

Original source file: netsig.9507
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9507

1. [NETSIG:1392] Spirit II a

```
From: djm@phx-az.com (Daniel Meredith)
Date: Sun,  2 Jul 1995 21:20:00 GMT
To: netsig@tapr.org
Message-ID: <950702143222582@phx-az.com>
Rendered body type: text/plain
```

```
RHK>From: Richard Hallman KI3V/7 <ki3v@connectus.com>

RHK>Was wondering if anybody has had any luck in running a KISS Eprom
RHK>in a PacComm Spirit II Tnc???    If so.....Which make and model
RHK>of KISS Eprom did you use??   I have had a hard time getting one to
RHK>work.   Works fine in the TNC-2 (1270 series).   Im using the KISS
RHK>command in the PacComm firmware right now,  but would rather use the KISS
RHK>eprom in case of drop-outs.   (Yes, the Eprom is 150ns or faster...)

RHK>   Thanks!    Rich  KI3V/7

Rich,
    I am using G8BPQ's supplied KISS and it is working fine on our NOS
system at a remote site.


Dan

-----                      \---------------/                          -----
                       Arizona Network Intertie Group
                  "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP                    Voice: +1-602-489-7384
P.O. Box 45378                                Fax  : +1-602-912-0426
Phoenix,  Arizona                             BBS  : +1-602-912-0225
          85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator



---
 * OLXWin 1.00 * Press any key to continue or any other key to quit
```

2. 1995 ARRL DCC (Papers Deadline)

```
From: Greg Jones <gjones@tenet.edu>
Date: Mon, 3 Jul 1995 03:48:03 -0500 (CDT)
To: aprssig@tapr.org (BBS SIG mailing), bbssig@tapr.org (BBS SIG mailing),
        hfsig@tapr.org (HF SIG mailing), netsig@tapr.org (NETSIG mailing),
        amsat-bb@amsat.org (AMSAT BB Mail Group), tapr-tnc@tapr.org
Message-ID: <199507030848.DAA31049@Leslie-Francis.tenet.edu>
Rendered body type: text/plain
```

```
1995 ARRL Digital Communications Conference
September 8-10th, 1995
Arlington, Texas (minutes from DFW airport)


     *************  PAPERS DEADLINE July 21st, 1995  **************


        Anyone interested in digital communications is invited to submit a
paper for publication in the Conference Proceedings.  Presentation at the
Conference is not required for publication.  If you know of someone who is
doing great things with digital communications, be sure to personally tell
them about this!  Papers are due by July 21, 1995, and should be submitted
to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111 or via the
Internet to mweinberg@arrl.org.  Please contact Maty for detailed format
requirements.


Full text is available on the Internet:
FTP: ftp.tapr.org    WWW:  hhtp://www.tapr.org/tapr    E-Mail: tapr@tapr.org
------------------------------------------------------------------------------
```

The ARRL Digital Communications Conference is an international forum for radio amateurs in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. The Digital Communications Conference is not just for the digital elite, but for digitally-orientated amateurs of all levels of experience.

The 1995 Digital Communications Conference will be held on September 8-10th, 1995 in Arlington, Texas. Arlington is just minutes away from the Dallas/Ft. Worth International Airport, which is located in the middle of the country, and airfares have never been cheaper for this conveniently-located conference.

In addition to the presentation of papers on Saturday, two workshops will be held during the conference. On Friday, Keith Sproul, WU2Z, will hold a workshop on APRS packet-location software. Keith is the Chair of the TAPR APRS Special Interest Group, developer of the Macintosh version of APRS, and a leader in the area of APRS technology. This is a unique opportunity to gain insight into this fast growing new digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning Satellites). On Sunday, Dewayne Hendricks, WD8DZP, will conduct a workshop focusing on a survey of Personal Communications Systems and their applications and use in the Amateur Radio Service. Dewayne is an expert in the area of commercial wireless systems; his company WarpSpeed Imagineering, focuses on wireless Internet. This workshop presents an opportunity to learn how Personal Communications Technology (handheld and small business wireless systems) can be used in the amateur service.

Full information on the conference and hotel information can be obtained by contacting Tucson Amateur Packet Radio, 8987-309 E. Tanque Verde Road, Tucson, AZ 85749-9399. Phone: (817) 383-0000. Fax: (817) 566-2544. Internet: TAPR@TAPR.ORG http://www.tapr.org/tapr

Sincerely,
Greg Jones, WD5IVD - President, Tucson Amateur Packet Radio
Dave Wolf, WO5H - President, Texas Packet Radio Society

3. Internet and LL forwarding

From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 6 Jul 1995 20:06:58 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950706195607.13294B-100000@acca>
Rendered body type: text/plain

Since this is a networking issue I will talk in this Sig. Hank is trying to put Ham Radio into the packet bbs world again. But as he has said it's a loosing battle.

I disagree. For 2 years now I have been forwarding with F6CNB Remi near Housten via the Las Cruces NM Gateway. This is accually an internet link via the telephone network. This connection has been the fastest and best link I have ever had in my 8 years of BBS Syoping. Remi has other BBS that he forwards to and it's not uncommon for a message from my bbs to New England to arrive there in about 2 hours! I had a user tell me his father called him on the phone to tell him he got a response to his message in 3 hours!

I see the day not too far ahead when the internet will get so busy that it will be unusable. We are headed that way now and it seems to get worse every week....

When the internet dies then the old reliable Radio links will look better, if they work....

73, de karl k5di

4. Re: [NETSIG:1403] Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 6 Jul 95 19:20:02 PDT
To: netsig@tapr.org

Message-ID: <9507061920.ZM27784@hanko>
Rendered body type: text/plain

On Jul 6, 9:14pm, Klarsen wrote:
> Subject: [NETSIG:1403] Internet and LL forwarding
>
>   Since this is a networking issue I will talk in this Sig. Hank is
> trying to put Ham Radio into the packet bbs world again. But as he has
> said it's a loosing battle.
>
>   I disagree. For 2 years now I have been forwarding with F6CNB
> Remi near Housten via the Las Cruces NM Gateway. This is accually an
> internet link via the telephone network. This connection has been the
> fastest and best link I have ever had in my 8 years of BBS Syoping. Remi
> has other BBS that he forwards to and it's not uncommon for a message
> from my bbs to New England to arrive there in about 2 hours! I had a user
> tell me his father called him on the phone to tell him he got a response
> to his message in 3 hours!
>
>   I see the day not too far ahead when the internet will get so
> busy that it will be unusable. We are headed that way now and it seems to
> get worse every week....
>
>   When the internet dies then the old reliable Radio links will
> look better, if they work....

You have hit upon my thesis exactly: that the present use of commercial
links will degrade the long haul network to the point where it no
longer exists, and that we will be unable to recover from that situation.

Projecting current trends I suspect the long haul network will be
essentially dead in 12-36 months, supplanted by commercial links.

If we all think this is a "good thing" then there is no action that
need be taken. If we think this is a "bad thing" then action now
is required, or we will have no long haul network to fall back upon.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

5. Re: [NETSIG:1404] Re: Internet and LL forwarding

From: Klarsen <k5di@acca.nmsu.edu>
Date: Thu, 6 Jul 1995 21:20:49 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950706211131.22828A-100000@acca>
Rendered body type: text/plain

On Thu, 6 Jul 1995, Hank Oredson wrote:

> On Jul 6, 9:14pm, Klarsen wrote:
> > Subject: [NETSIG:1403] Internet and LL forwarding
> >
> >   Since this is a networking issue I will talk in this Sig. Hank is
> > trying to put Ham Radio into the packet bbs world again. But as he has
> > said it's a loosing battle.
> >
> >   I disagree. For 2 years now I have been forwarding with F6CNB
> > Remi near Housten via the Las Cruces NM Gateway. This is accually an
> > internet link via the telephone network. This connection has been the
> > fastest and best link I have ever had in my 8 years of BBS Syoping. Remi
> > has other BBS that he forwards to and it's not uncommon for a message
> > from my bbs to New England to arrive there in about 2 hours! I had a user
> > tell me his father called him on the phone to tell him he got a response
> > to his message in 3 hours!
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> >   I see the day not too far ahead when the internet will get so
> > busy that it will be unusable. We are headed that way now and it seems to
> > get worse every week....
> >
> >   When the internet dies then the old reliable Radio links will
> > look better, if they work....
>
> You have hit upon my thesis exactly: that the present use of commercial
> links will degrade the long haul network to the point where it no
> longer exists, and that we will be unable to recover from that situation.

Hank, I think nature in the form of sunspots, lack of same, has done more to stop HF packet BBS stuff. I do turn on the hf rig and listen to and copy the stuff on 10 mhz and 20 meters and it's pathetic at this time. But I hope the bands will pick up about the time the internet dies and we can enjoy 1200 baud on 10 Meters again!

> Projecting current trends I suspect the long haul network will be
> essentially dead in 12-36 months, supplanted by commercial links.
>
> If we all think this is a "good thing" then there is no action that
> need be taken. If we think this is a "bad thing" then action now
> is required, or we will have no long haul network to fall back upon.
>
>   ... Hank
>
> --
>
> Hank Oredson @ Mentor Graphics   Library Operations
> Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
> Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
>

I think the new hams that get on will want to try HF and maybe fix some nodes as they become expert ham Sysops. I am forwarding to kc5izt Kendall Mauldin who is 15 this year. He is out of school now and having a ball with ham radio. I envy him cuzz his entusiazom is contagious and my spelling goes to sleep at 2100 MDT....hi

73, de karl k5di

6. Re: [NETSIG:1405] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 6 Jul 95 20:55:43 PDT
To: netsig@tapr.org
Message-ID: <9507062055.ZM27906@hanko>
Rendered body type: text/plain

On Jul 6, 10:30pm, Klarsen wrote:
> Subject: [NETSIG:1405] Re: Internet and LL forwarding

>   Hank, I think nature in the form of sunspots, lack of same, has
> done more to stop HF packet BBS stuff. I do turn on the hf rig and listen
> to and copy the stuff on 10 mhz and 20 meters and it's pathetic at this
> time. But I hope the bands will pick up about the time the internet dies
> and we can enjoy 1200 baud on 10 Meters again!

I do not agree at all. From my own perspective, I use better modems (CLOVER) and appropriate frequencies, and am moving MORE traffic than I did at the sunspot max. It does take a bit more attention, in terms of adjusting the forwarding files to follow changing conditions, but the bands are hardly ever "dead" to the point there is unusual delay in moving traffic. That said, I do need to point out that I'm not advocating HF as a solution for long haul traffic. For 12 years I've consistently advocated the linking of ALL parts of North America via uhf/vhf long haul links. The fact that we don't have a good long haul network does not seem to be so much a technical problem as a political one: it is hard to maintain interest/cooperation/coordination over the distances and time span involved.

(Still sitting in the office baby-sitting some software builds. The windows stuff was finished and working hours ago. The unix stuff will take several hours more to complete.)

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

7. [NETSIG:1404] Re: Internet and LL forwarding -Reply

From: Orville Beach <orv@micom.com>
Date: Thu, 06 Jul 1995 19:54:20 -0800
To: netsig@tapr.org
Message-ID: <sffc505b.038@micom.com>
Rendered body type: text/plain

[stuff deleted]

Hank said -

"You have hit upon my thesis exactly: that the present use of
commercial links will degrade the long haul network to the
point where it no longer exists, and that we will be unable to
recover from that situation.

Projecting current trends I suspect the long haul network will
be essentially dead in 12-36 months, supplanted by
commercial links.

If we all think this is a "good thing" then there is no action that
need be taken. If we think this is a "bad thing" then action
now is required, or we will have no long haul network to fall
back upon.

   ... Hank

I suppose that means ham radio has been 'deteriorating'
since the first phone line was connected to a receiver... (I
suspect there's more truth to that than appears at first glance
:-)   )

I'm probably as guilty as anyone of helping promote this
trend, by busily installing NET/ROM links to various cities
via spare bandwidth on my company's private network.
There can be no argument that these forms of links work
better than most ham pure radio digital networks

But we DO need to preserve the amateur long-haul network,
precisely for those times when everything else has broken
down.   How to preserve it? <I> don't have the answer.

Several other comments -

I have an HF rig and 70 foot tower with monoband beams
that have been sitting idle ever since I stopped running
RTTY and moved to packet in 1985 (40 confirmed states -
sigh...).

I would fire up my HF station in a shot and dedicate it to
long-haul digital traffic if there were support for some of the
more efficient HF digital protocols integrated into (pick your
package: in my case, TNOS/Linux).   But not with AX.25: the
hobby's aggravating enough without having to wrestle with
that mess...

Second comment: not to start a philosophical discussion,
but are we ham radio operators, or are we now 'amateur
communicators'? I'm not real optimistic about the future of
the 'pure' ham radio operator.

On the other hand, the 'amateur communicator' operates
under the same exact philosphy hams have had since day
one: "Use what ya got"... Maybe that will be our undoing :-)

73 - Orv - wb6wey
orv@micom.com

8. Re: [NETSIG:1406] Re: Internet and LL forwarding

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 07 Jul 1995 12:04:10 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507071911.OAA06614@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

To shift this debate into a little different perspective, the REAL REASON
the "internet forwarding problem" exists is due to the mind-set of the bbs
sysops. For reasons I've never understood, they feel compelled to forward
any and every form a junk mail that drifts by.

As a result, the RF BBS forwarding network rapidly became saturated beyond its capacity. This, along with a rush by other wanta-be sysops, has exhausted all of the available HF digital spectrum. It doesn't take a rocket scientist to look at the HF spectrum and determine how much 300 baud packet traffic can be supported at any given time. However the laws of reason hasn't prevented more and more from attempting to pile on, and with predictable results.

One can talk about how GREAT Clover works on HF but even so as more sysops switch over and as the rate of traffic continues its inevitable increase, Clover will faulter as well. Adding to the HF congestion is the fact the average sysop knows very little about how to set up an efficient HF point-to-point data link. He/she just follow the herds poor practices which decreases forwarding efficiency.

In addition, a properly equipted HF station costs MONEY. Has anyone looked at the price of towers, antennas, and rigs lately? Even a used HF package could easily cost well over $1,000. A dedicated HF forwarder probably has an investment of around $5,000 in terms of replacement value for just the RF and antenna systems.

Given the fact that there are finite limits to the amount of RF spectrum and to transmission technology, there is a limit to how much data can be passed. Yet the average bbs sysop continues to seek more and more traffic and features so's to make HIS bbs more appealing to local users out of FEAR of losing them to a local competitive BBS.

The irony in all of this is that the majority of bulletins that forward in every month are locally NOT READ! Ask yourself this: as sysop, do YOU read each and every bulletin/msg that comes in? You are sitting right at the console and thus no media delay for reads. If YOU don't, then why would you expect your users to read them? More importantly, do you even CARE if anyone reads them?

Indeed, last year we had an example of the largest bbs sysop in our state NOT knowing (or not caring) what was being passed on his system for over two months! In this case a land line forwarding protocol conflict caused up to 80 percent of the bulletins arriving locally to be garbled. After a few hard words were exchanged, the problem was corrected. The significance in this is that during all of this time, had it not been for one whining and persistant user, NO ONE else either caught it, or cared.

Locally our BBS receives about 9,000 messages a month. The average user read rate is below well below 10 percent. This means the network hassle of forwarding over 8,000 messages a month is a waste of resources.   Most of our users ONLY check in to receive and send personal mail. While they *may* have interest in reading some of the bulletins, they don't have time to list, let alone read, 9,000 messages a month! From my discussions with users in other areas, our local BBS usage is the norm.

The bottom line here is: "Why do you sysops continue to push for more and more traffic, which stresses the RF forwarding systems beyond their limits, to only end up serving such a minor purpose?   How does ham radio benefit from this? Who is to really blame for the shift to internet forwarding?"

73 de Jack

9. Re: [NETSIG:1408] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 7 Jul 95 12:51:46 PDT
To: netsig@tapr.org
Message-ID: <9507071251.ZM29577@hanko>
Rendered body type: text/plain

On Jul 7, 2:23pm, Jack Taylor wrote:
> Subject: [NETSIG:1408] Re: Internet and LL forwarding
> To shift this debate into a little different perspective, the REAL REASON
> the "internet forwarding problem" exists is due to the mind-set of the bbs
> sysops. For reasons I've never understood, they feel compelled to forward
> any and every form a junk mail that drifts by.

So you are suggesting censorship. Oh my, not that again.

> As a result, the RF BBS forwarding network rapidly became saturated beyond
> its capacity. This, along with a rush by other wanta-be sysops, has
> exhausted all of the available HF digital spectrum. It doesn't take a
> rocket scientist to look at the HF spectrum and determine how much 300 baud
> packet traffic can be supported at any given time. However the laws of

> reason hasn't prevented more and more from attempting to pile on, and with
> predictable results.

Why would anyone try and use packet on HF? Thought we outgrew that some
years ago when better modes became available. From my own perspective,
I see no such saturation, but rather see a network running at perhaps
25% of it's capability. i.e. the presented load is roughly 1/2 of
the networks carrying ability.

> One can talk about how GREAT Clover works on HF but even so as more sysops
> switch over and as the rate of traffic continues its inevitable increase,
> Clover will faulter as well. Adding to the HF congestion is the fact the
> average sysop knows very little about how to set up an efficient HF
> point-to-point data link. He/she just follow the herds poor practices which
> decreases forwarding efficiency.

Can you give examples of the above? I see no such thing, but rather
see knowledgable sysops making good use of spectrum. Perhaps this
perspective changed when I abandoned HF packet a few years back.

> In addition, a properly equipted HF station costs MONEY. Has anyone looked
> at the price of towers, antennas, and rigs lately? Even a used HF package
> could easily cost well over $1,000. A dedicated HF forwarder probably has
> an investment of around $5,000 in terms of replacement value for just the RF
> and antenna systems.

About right: $5k will give you a fairly good HF system, but a bit more
money will provide a better one. A bit less, on the order of $2k will
provide a fully functional but not "top of the line" HF system.

> Given the fact that there are finite limits to the amount of RF spectrum and
> to transmission technology, there is a limit to how much data can be passed.
> Yet the average bbs sysop continues to seek more and more traffic and
> features so's to make HIS bbs more appealing to local users out of FEAR of
> losing them to a local competitive BBS.

Huh? You live in a strange world.

> The irony in all of this is that the majority of bulletins that forward in
> every month are locally NOT READ! Ask yourself this: as sysop, do YOU read
> each and every bulletin/msg that comes in? You are sitting right at the
> console and thus no media delay for reads. If YOU don't, then why would you
> expect your users to read them? More importantly, do you even CARE if
> anyone reads them?

You have stats on this? You mean "not read at my own system" I suspect
rather than "not read on my system, nor any system downstream from mine."

> Indeed, last year we had an example of the largest bbs sysop in our state
> NOT knowing (or not caring) what was being passed on his system for over two
> months! In this case a land line forwarding protocol conflict caused up to
> 80 percent of the bulletins arriving locally to be garbled. After a few
> hard words were exchanged, the problem was corrected. The significance in
> this is that during all of this time, had it not been for one whining and
> persistant user, NO ONE else either caught it, or cared.

Did you lynch him, or only disconnect him from the network?
Sounds like you have a rather serious cooperation/coordination problem.
This is the kind of stuff that falls into the "politics" side of
bbs sysoping, not the "technical" side.

> Locally our BBS receives about 9,000 messages a month. The average user
> read rate is below well below 10 percent. This means the network hassle of
> forwarding over 8,000 messages a month is a waste of resources.   Most of
> our users ONLY check in to receive and send personal mail. While they *may*
> have interest in reading some of the bulletins, they don't have time to
> list, let alone read, 9,000 messages a month! From my discussions with
> users in other areas, our local BBS usage is the norm.

"hassle"? You have to personally forward them?
Your message load seems fairly small. It is a rare month that the message
count drops below 12,000 here. But so what?

> The bottom line here is: "Why do you sysops continue to push for more and
> more traffic, which stresses the RF forwarding systems beyond their limits,
> to only end up serving such a minor purpose?   How does ham radio benefit
> from this? Who is to really blame for the shift to internet forwarding?"

Sysops are not pushing for "more traffic", the users are.

I hope this difference is clear to every one.
Network traffic load is not generated by "sysops" but by "users",
those folks who send messages (like this one).

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

10. Re: [NETSIG:1408] Re: Internet and LL forwarding

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Fri, 7 Jul 1995 17:42:29 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950707173108.1181I-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Fri, 7 Jul 1995, Jack Taylor wrote:

> To shift this debate into a little different perspective, the REAL REASON
> the "internet forwarding problem" exists is due to the mind-set of the bbs
> sysops. For reasons I've never understood, they feel compelled to forward
> any and every form a junk mail that drifts by.

I predict the counterargument you'll get is that the pressure of
additional traffic is a necessary pressure factor to improving the HF
forwarding system (but I won't make that argument)

I'm surprised no one over the past few days of bemoaning internet
connectivity had mentioned that until very recently, only a very few hams
were legally and practically set up for HF forwarding. Perhaps there was
just too much personal animosity in the arguments to permit calm
reflection on where we've been particlarly with regard to the stifling
and chilling effect of the overly long STA.

Further muddying the waters in this week's bickering was the mixing of
internet vs. ham and ax.25 vs. tcp/ip debate (effectively and thankfully
quenched by the fellow who brought up the encapsulation of tcp/ip with
ax.25, yet the negativity lingered on)

With the move to NETSIG, perhaps the baggage of the old arguing can be
left behind on BBSIG, forgotten. I would like to ask two questions to you
folks, that is, if all the alternate methods were dumped years ago and we
were doing our forwarding between major and mid-sized metropoli on HF, how
many stations would be involved and how many connections would each be
making to different stations to create a forwarding network?

The other question is a two parter, can we satisfy those critics of the
present system that we do not have a network absent realtime
transcontinental connectivity for end users, and if so, how?

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

11. Re: [NETSIG:1408] Re: Internet and LL forwarding

From: "Bob Nielsen" <nielsen@PrimeNet.Com>
Date: Fri, 7 Jul 1995 16:26:49 +0700
To: netsig@tapr.org
Message-ID: <199507072327.QAA04589@mailhost.primenet.com>
Rendered body type: text/plain

Jack Taylor <n7oo@hereford.ampr.org> writes:

> To shift this debate into a little different perspective, the REAL REASON
> the "internet forwarding problem" exists is due to the mind-set of the bbs
> sysops. For reasons I've never understood, they feel compelled to forward
> any and every form a junk mail that drifts by.
>
> As a result, the RF BBS forwarding network rapidly became saturated beyond
> its capacity. This, along with a rush by other wanta-be sysops, has

> exhausted all of the available HF digital spectrum. It doesn't take a
> rocket scientist to look at the HF spectrum and determine how much 300 baud
> packet traffic can be supported at any given time. However the laws of
> reason hasn't prevented more and more from attempting to pile on, and with
> predictable results.

(much stuff deleted)

It was my understanding that the h.f. automatic forwarding networks
only accepted messages addressed to a specific station, not all the
all@everywhere, etc. stuff which clogs the BBSs so much that I almost never
issue a 'list' command anymore. Is this not the case?

Bob

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                               AX.25: w6swe@wb7tls.az.usa.noam

12. Re: [NETSIG:1408] Re: Internet and LL forwarding

From: Klarsen <k5di@acca.nmsu.edu>
Date: Fri, 7 Jul 1995 18:23:08 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950707181621.27543C-100000@acca>
Rendered body type: text/plain

On Fri, 7 Jul 1995, Jack Taylor wrote:
>
> The bottom line here is: "Why do you sysops continue to push for more and
> more traffic, which stresses the RF forwarding systems beyond their limits,
> to only end up serving such a minor purpose?   How does ham radio benefit
> from this? Who is to really blame for the shift to internet forwarding?"
>
> 73 de Jack
>
>

        Jack what makes you think it's the Sysop who is pressing for more
messages. In fact the reverse is true. I would gladly do away with
Bulletin traffic of National and International scope.

        I want to get the mail from Tom-ham to Pete-ham there asap. If
you look it's just that mail which is jamming up 20 meters. I don't think
a single bulletin passes on that band now. Same with 30 meters.

        A typical day will see my bbs with 250 new bulletins and 6 mail
things. So the bottom line is stop the long distance bulletins. But I
have users that have like them.....

73, karl

13. Re: [NETSIG:1410] Re: Internet and LL forwarding

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 07 Jul 1995 17:23:52 -0700
To: netsig@tapr.org
Message-ID: <199507080031.TAA10935@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>On Fri, 7 Jul 1995, Jack Taylor wrote:
>
>> To shift this debate into a little different perspective, the REAL REASON
>> the "internet forwarding problem" exists is due to the mind-set of the bbs
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>> any and every form a junk mail that drifts by.
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>I predict the counterargument you'll get is that the pressure of
>additional traffic is a necessary pressure factor to improving the HF
>forwarding system (but I won't make that argument)
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>I'm surprised no one over the past few days of bemoaning internet
>connectivity had mentioned that until very recently, only a very few hams
>were legally and practically set up for HF forwarding. Perhaps there was
>just too much personal animosity in the arguments to permit calm
>reflection on where we've been particlarly with regard to the stifling
>and chilling effect of the overly long STA.
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>internet vs. ham and ax.25 vs. tcp/ip debate (effectively and thankfully

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>With the move to NETSIG, perhaps the baggage of the old arguing can be
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>folks, that is, if all the alternate methods were dumped years ago and we
>were doing our forwarding between major and mid-sized metropoli on HF, how
>many stations would be involved and how many connections would each be
>making to different stations to create a forwarding network?
>
>The other question is a two parter, can we satisfy those critics of the
>present system that we do not have a network absent realtime
>transcontinental connectivity for end users, and if so, how?
>
>Howie
>
>
>--
>Howard Goldstein   hg@n2wx.ampr.org
>   N2WX   http://www.tapr.org/~n2wx/
>

Some excellent points, Howie! First regarding the limitations of traffic versus the forwarding capacity of HF, Hank has just informed us that HF is currently underutilized. I wasn't aware of this.

My impression is that the STA did have a limiting effect on forwarding, at least initially. After two or three years a non-STA HF forwarding network came into existance and took up the bulk of the bulletin traffic. As the BBS system grew, and non-HF license types started participating, telephone forwarding become popular. Interest in the internet as a forwarding medium was first publically announced about three years ago at the annual TAPR meeting. Since then, xnos gateway software has matured, prices on internet access and LL modems have plumeted to the point where the technology is economically attractive.

Regarding the number and location of HF forwarding stations, this would be a variable, due to the ever-changing propation medium. I've never seen anything published regarding a word-wide HF network distribution study. Then too, there are the satellite gateways, which would need to be incorporated into the distribution scheme.

As far as transcontinental connects for end users, this would require HF-VHF/UHF gateways to be established at appropriate locations. In the past, due to circuit overload considerations, PBBS forwarding stations typically discouraged user connects. In todays world Clover is considered the most efficient HF data channel protocol. However, to my knowledge there is no driver available which would allow real-time connectivity from ax.25<->Clover.

One transmission mode that hasn't been explored to any extent within the amateur community is meteor scatter. Various government agencies have performed studies showing reliable data throughputs ranging from 200 WPM to greater than 1 kbps with a range of up to 1500 km in the 40 MHz band. Indeed, I'm told there are one or two systems currently in operation.

73 de Jack

14. mail_archive

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 8 Jul 1995 09:38:26 -0500 (CDT)
To: bbssig@tapr.org (BBS SIG mailing), netsig@tapr.org (NETSIG mailing),
        hfsig@tapr.org (HF SIG mailing), aprssig@tapr.org (BBS SIG mailing)
Message-ID: <199507081438.JAA23566@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

The mail archives for all the SIGs are now updated nightly.

They can be gotten by ftp in each SIG area under mail_archive

ftp://ftp.tapr.org/tapr/SIG/

In addition, the mail_archive files have been available from the TAPR listserv.

There are links to the SIGs in the TAPR web page.
http://www.tapr.org/tapr

Cheers - Greg

15. Re: [NETSIG:1413] Re: Internet and LL forwarding

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Sat, 8 Jul 1995 11:00:47 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950708102710.361D-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Fri, 7 Jul 1995, Jack Taylor wrote:

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> versus the forwarding capacity of HF, Hank has just informed us that HF is
> currently underutilized. I wasn't aware of this.

Neither was I, yet another poster to the list (maybe it was bbssig though)
wrote that things were quite busy with personal mail and that personal
stuff was bogging down the HF side. Is the jury out on this one?

>
> My impression is that the STA did have a limiting effect on forwarding, at
> least initially.

I received private email from an STA participant this morning and felt it
worth emphasizing that criticism of the STA extends only to the process
that allowed it to go on for so long as a temporary, closed group measure,
and does not include criticism of the dedicated individuals who comprised
the STA group.

> After two or three years a non-STA HF forwarding network
> came into existance and took up the bulk of the bulletin traffic. As the
> BBS system grew, and non-HF license types started participating, telephone
> forwarding become popular. Interest in the internet as a forwarding medium
> was first publically announced about three years ago at the annual TAPR
> meeting. Since then, xnos gateway software has matured, prices on internet
> access and LL modems have plumeted to the point where the technology is
> economically attractive.

Thank you for pointing this out. Reading the stuff from this past week I
was thinking of how much the debate resembled, in tenor, the code/no-code
wars. Apparently there is more in common with that fight than just tenor:
There is a substantial group of HF-less sysops who wish to participate in
the network as more than a local way station. I can't say I blame them.
More on this in a moment.

>
> Regarding the number and location of HF forwarding stations, this would be a
> variable, due to the ever-changing propation medium. I've never seen
> anything published regarding a word-wide HF network distribution study.
> Then too, there are the satellite gateways, which would need to be
> incorporated into the distribution scheme.

In the absence of even a superficial study, the proponents of ham-only
forwarding are missing a wonderful opportunity to bring in converts. Are
the raw data available? STA participants, did you come to any conclusions
regarding the number of stations a given HF frequency could support at a
given loading?

>
> As far as transcontinental connects for end users, this would require
> HF-VHF/UHF gateways to be established at appropriate locations. In the
> past, due to circuit overload considerations, PBBS forwarding stations
> typically discouraged user connects. In todays world Clover is considered
> the most efficient HF data channel protocol. However, to my knowledge there
> is no driver available which would allow real-time connectivity from
> ax.25<->Clover.
>
> One transmission mode that hasn't been explored to any extent within the
> amateur community is meteor scatter. Various government agencies have

> performed studies showing reliable data throughputs ranging from 200 WPM to
> greater than 1 kbps with a range of up to 1500 km in the 40 MHz band.
> Indeed, I'm told there are one or two systems currently in operation.

Both of these network related points tie in a little bit with the HF-less guys' unfulfilled wish to act as more than a rest stop on the S&F highway. Until ham packet provides something resembling the internet model of full end-to-end connectivity, I think there will always be a dissatisfied bunch who'll strike out on their own to use alternative, non-amateur means to pass messages.

Like yourself Jack I'd like to see more scatter modes in use. How difficult is the technology? I recall a truckers' network that involved one or two centrally located main bases that constantly beaconed and when a remote vehicle heard the beacon it replied with a burst of data. Do our rigs key fast enough to make a system like this work for us? How much traffic is usually offered from each site? Are the modems up to the task of utilizing these brief bursts? Does anyone see a problem in formalizing our centralized scheme, almost an NTS like model, permanently?

Lots of questions, and as you can see, I have few answers.

73 Howie

--
Howard Goldstein hg@n2wx.ampr.org
N2WX http://www.tapr.org/~n2wx/

16. Arizona VHF/UHF Digital M

From: djm@phx-az.com (Daniel Meredith)
Date: Sun, 9 Jul 1995 06:05:00 GMT
To: netsig@tapr.org
Message-ID: <950708231234598@phx-az.com>
Rendered body type: text/plain

*****IF YOU ARE ATTENDING THE ARIZONA FT. TUTHILL HAMFEST*****

You Are Cordially Invited To Attend The Arizona VHF/UHF Digital Meeting.

Ft. Tuthill - Flagstaff, Arizona

July 22, 1995 9 A.M. to 11 A.M.

Building 10

Discussion In Order:

TCP/IP
COORDINATION REPORT (NODES ONLY)
NODE-OP REPORTS
SYSOP REPORTS
NETWORK BUILD STATUS
OPEN DISCUSSION

Co-Sponsored By:

The Arizona Network Intertie Group & The Amateur Radio Council of Arizona

Daniel J. Meredith
Arizona VHF/UHF Digital Coordinator
Voice : +1-602-489-7384
Fax : +1-602-912-0426
Data-PBBS : +1-602-912-0225
Ax.25 : n7mrp@n7mrp.az.usa.noam
Internet : djm@phx-az.com

[Entered at 22:46 MST on 08-Jul-95]

---
* OLXWin 1.00 * MSI - Connecting The World (tm)

17. Censorship and the PBBS (was [NETSIG:1409] Internet and LL forwarding)

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sun, 09 Jul 1995 13:27:40 -0700
To: netsig@tapr.org
Message-ID: <199507092035.PAA03329@dingus.n5lyt.datarace.com>

Rendered body type: text/plain

>On Jul 7, 2:23pm, Jack Taylor wrote:
>> Subject: [NETSIG:1408] Re: Internet and LL forwarding
>> To shift this debate into a little different perspective, the REAL REASON
>> the "internet forwarding problem" exists is due to the mind-set of the bbs
>> sysops. For reasons I've never understood, they feel compelled to forward
>> any and every form a junk mail that drifts by.
>
>So you are suggesting censorship. Oh my, not that again.

The "issue of censorship" is a good topic to discuss. Seems like this is
nothing more than a label to justify the mind-set of certain sysops in
forwarding any and all forms of traffic.

My dictionary says: "(sen-ser-ship) n. Supervision; restriction; subject to
examination."

In previous debates on the amateur packet network, I've often seen this word
associated with very negative and nationalistic emotionalisim. However my
dictionary doesn't say anything in this context about black uniforms, good
versus evil., etc. It just says what it says.

A secondary meaning of the word "censor" says: "To ban, to prohibit, as
publication, performance, etc." This secondary meaning is no doubt the one
that some people get emotionally fired up over.

In real life though, don't we ALL perform censorship in our day-to-day
activities? Don't we make conscious decisions when we dress in the morning
to wear one color and style of clothing, but not another? In life don't we
often exclude (ban) one class of humanity in favor of another? By doing so
aren't we exercising a freedom of choice?

Do newspapers and magazines publish each and everything that's submitted to
them? Of course not. Isn't this censorship? Of course it is. But isn't
it also just the exercise of the freedom of choice? Are we concerned about
this practice? For the most part, no.

I'm a C-band vidiot. During much of the day the TV networks send news feeds
on the satellites. Every day there is an AWFUL lot of interesting news
available on these feeds. Yet when the 20 minutes or so of evening news is
aired, only certain news items (often in abreviated format) ever make the
national broadcast.

Is someone censoring out the other news events? Yes. Due to the logistics
of having only so much air time, choices are made as to what will be
presented and into what detail. Should this censorship concern us viewers?
Should we demand the networks expand their news programs to the point of
showing each and every news event taking place in the entire world?

Isn't this example similar to amateur packet "news feeds"? Our networks
have logistics limitations in the form of time and capacity. From a
practical viewpoint shouldn't we consider limiting the network content to
that which:

A. Is of interest to the MAJORITY of the users
B. Can be accomodated over our amateur systems without major upgrade costs.

To me (and perhaps to me alone) this seems like a more sensible approach
than to continue on the course we've been following.

73 de Jack

18. Re: [NETSIG:1417] Censorship and the PBBS (was Internet and LL forwarding)

From: Fred Peerenboom <peerenbf@dmapub.dma.org>
Date: Sun, 9 Jul 1995 17:43:36 -0400 (EDT)
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <Pine.SV4.3.91.950709173928.25071A-100000@dmapub.dma.org>
Rendered body type: text/plain

On Sun, 9 Jul 1995, Jack Taylor wrote:

> >On Jul 7, 2:23pm, Jack Taylor wrote:
> >> Subject: [NETSIG:1408] Re: Internet and LL forwarding
> >> To shift this debate into a little different perspective, the REAL REASON
> >> the "internet forwarding problem" exists is due to the mind-set of the bbs
> >> sysops. For reasons I've never understood, they feel compelled to forward
> >> any and every form a junk mail that drifts by.
> >

> >So you are suggesting censorship. Oh my, not that again.
>
> The "issue of censorship" is a good topic to discuss. Seems like this is
> nothing more than a label to justify the mind-set of certain sysops in
> forwarding any and all forms of traffic.
>
>
> A. Is of interest to the MAJORITY of the users
> B. Can be accomodated over our amateur systems without major upgrade costs.
>
> To me (and perhaps to me alone) this seems like a more sensible approach
> than to continue on the course we've been following.
>
> 73 de Jack
>
Hmmmmmm, by whos' standards should we censor the bulletins? I prefer to
"censor" mine by not reading those that may offend me personally, but I
do allow all to pass unhindered in the bbs here as my standards are not
the same as others and I have no right to impress my personal standards
upon the masses. BTW--that is not a heated up discussion or ranting on
censorship. It is a personal viewpoint only.
Asbestos underthings now being donned in grim anticipation. ;->
Fred   ke8tq

---

19. SATGATE Info??

From: Richard Hallman KI3V/7 <ki3v@connectus.com>
Date: Sun, 9 Jul 1995 14:56:34 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950709145409.28771A-100000@africa.connectus.com>
Rendered body type: text/plain

Does anybody have info on setting up a SATGATE?? I have a user who
has offered to help buy and install a SATGATE system, but we both need
more info.   Is there a FAX list or site to get more info???

  Thanks! Rich KI3V/7

****
Richard Hallman   Internet: ki3v@connectus.com
11870 Heartpine St   IP Address:
Reno Nevada 89506   Amateur Radio: KI3V
****

---

20. RE: [NETSIG:1417] Censorship and the PBBS (was Internet and LL forwarding)

From: "John W. (Bill) Hays, W0OMV" <billh@netins.net>
Date: Sun, 09 Jul 1995 19:59:15 CST
To: netsig@tapr.org
Message-ID: <009931BE.EE7E5B58.107@netins.net>
Rendered body type: text/plain

Very sensible thoughts.

---

21. Re: [NETSIG:1418] Re: Censorship ..NOT!

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sun, 9 Jul 1995 22:09:25 -0300
To: netsig@tapr.org
Message-ID: <199507100109.WAA24409@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>
>On Sun, 9 Jul 1995, Jack Taylor wrote:
>
>> >On Jul 7, 2:23pm, Jack Taylor wrote:
>>
>> The "issue of censorship" is a good topic to discuss.

Sri Jack I agree with your intent but I disagree on the topic title.
(This topic also would belong more on BBSSIG than NETSIG I would imagine,
but I know most Sysops read both Sigs anyway so respondents feel free to
flip it over.)

In my view "censorship" does not apply to bulletins since they are
Broadcasting. NO BBS is required to carry ANY bulletin the Sysop chooses
not to.
Private Mail, well thats a different story.

I also disagree with the practise of some BBS that run in G.I.G.O. mode and
fwd bulletins far outside their INTENDED coverage, such as @EU in CAN & USA
or @USA (and all its dozen flavours) outside of U.S.A.

The misuse of @WW and @ALLBBS is also causing a lot of unnecessary
traffic, but then the Sysops who think that MORE is better would no doubt
disagree.

Anyway, its a very "hot" potatoe. BBS that have Networks (and/or InterNet) that
can handle 500 or more bulletins a day typically run in G.I.G.O. mode and are
proud of it. Those of us who must work with more modest resources are much
more aware of what & how we fwd bulletins.

pt2.
>Hmmmmmm, by whos' standards should we censor the bulletins? I prefer to
>"censor" mine by not reading those that may offend me personally, but I
>do allow all to pass unhindered in the bbs here as my standards are not
>the same as others and I have no right to impress my personal standards
>upon the masses. BTW--that is not a heated up discussion or ranting on
>censorship. It is a personal viewpoint only.
>Asbestos underthings now being donned in grim anticipation. ;->
>Fred   ke8tq
>

Your view Fred is accepted and understood.(Look Ma, No Flame)
However, as mentioned earlier, I do not think the term "censorship" is
appropriate when talking about "reasonable" limiting of bulletins and their
coverage.

Ideally it would be nice to assume that USERS themselves would be
responsible enough to use appropriate Local/Regional/National distribution
but too many times they seem to take the easy way and use
@WW/ALLBBS..especially if they know that a good number
of BBS actually fwd such bulletins.

One thing I have tried to get Sysop here to do is setup fwding files to
separate the traditional from the fringe bulletins so that ARRL/AMSAT etc
bulletins get priority and also that
BBS fwding is less during normal User hours.

For example, I have suggested fwding WW/USA etc bulletins overnight only by
putting G ARRL, G AMSAT in the normal fwd block to your neighbour and then
creating a "dummy" BBS fwd block such as this: (in FBB)

```
; Fwd USA/WW to VE1DRG overnight
; also create US2DRG as "dummy" call in BBS.SYS
A US2DRG
   G USA
   G WW
  ; etc
  IF 02-06
     C C SWITCH
     ; other network connects here
     C C VE1DRG
 ENDIF
------------
```

73 - Ron
ve1aic

22. Re: [NETSIG:1417] Censorship and the PBBS

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 9 Jul 1995 20:52:19 -0500
To: netsig@tapr.org
Message-ID: <199507100152.UAA24629@ns1.texoma.com>
Rendered body type: text/plain

>
>Isn't this example similar to amateur packet "news feeds"? Our networks
>have logistics limitations in the form of time and capacity. From a
>practical viewpoint shouldn't we consider limiting the network content to
>that which:
>
>A. Is of interest to the MAJORITY of the users
>B. Can be accomodated over our amateur systems without major upgrade costs.
>
>To me (and perhaps to me alone) this seems like a more sensible approach

>than to continue on the course we've been following.
>
>

I can't help but believe that we'll always be overloaded to some extent. If
it wasn't, wouldn't we have reason to be concerned then as well? The
overload indicates a popular, growing network.

Most of the achievements and progress of ham radio has sprung from hams
finding ways to weasel around limitations they face. Some guy finds an
easier way to do more, and ham radio advances.

I view the deluge of traffic being hosed through a soda straw as being the
challenge packet radio is currently facing. We can deal with it, as
individual SYSOPS by refusing to accept or foward certain kinds of traffic
but I don't think that this is what's really needed in connection with
throughput problems.
(I DO censor, but not for that reason and not to that extent.)

I think we NEED to be annoyed and pestered by our throughput problems.. They
oughta be right in our face all the time.

That way, it'll happen a lot sooner; Some guy will get off his can and find
an easier way to do more.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

23. Re: Censorship and the PBBS (was Internet and LL forwarding)

From: shawnpat@sierra.net (Shawn Skinner)
Date: Sun, 09 Jul 1995 02:58:49 -0700
To: netsig@tapr.org
Message-ID: <199507100300.AA06039@diamond.sierra.net>
Rendered body type: text/plain

>
>
>On Sun, 9 Jul 1995, Jack Taylor wrote:
>
>> >On Jul 7, 2:23pm, Jack Taylor wrote:
>> >> Subject: [NETSIG:1408] Re: Internet and LL forwarding
>> >> To shift this debate into a little different perspective, the REAL REASON
>> >> the "internet forwarding problem" exists is due to the mind-set of the bbs
>> >> sysops. For reasons I've never understood, they feel compelled to forward
>> >> any and every form a junk mail that drifts by.
>> >
JT in a later post:
>> The "issue of censorship" is a good topic to discuss. Seems like this is
>> nothing more than a label to justify the mind-set of certain sysops in
>> forwarding any and all forms of traffic.
>> <snip>
>>
>> A. Is of interest to the MAJORITY of the users
>> B. Can be accomodated over our amateur systems without major upgrade costs.
>>
>> To me (and perhaps to me alone) this seems like a more sensible approach
>> than to continue on the course we've been following.
>>
>> 73 de Jack
>>
>Hmmmmmm, by whos' standards should we censor the bulletins? I prefer to
>"censor" mine by not reading those that may offend me personally, but I
>do allow all to pass unhindered in the bbs here as my standards are not
>the same as others and I have no right to impress my personal standards
>upon the masses. BTW--that is not a heated up discussion or ranting on
>censorship. It is a personal viewpoint only.
>Asbestos underthings now being donned in grim anticipation. ;->
>Fred   ke8tq
>

Three years ago, I proposed exactly what Fred is doing, with the added
part that any restriction of reading off the local BBS only be done
locally and not effect the forwards, or if not then let others know
so the upline/down-line bbs's could forward around the restriction.

In part I had hoped that the tech would have improved faster than the
traffic load and releaved the problem. Since this didn't happen and
is sure not to occur in time to help any thing, I find that I must

change my opinion.

Proposal:
ALLUS: Limited to the following catagories.
Amsat, Keps, ARRL (et-all), debate, (in general public notices that
truly effect the majority of North american hams), Regional swap
nets (described below).

REGION: (ie: WestUS, EastUS, NorthUS, ECoast, Wcoast, Central, SouthUS)
ForSale, Wanted, Humor, Religion, (in general limited interest items
that have fans in a region, for example the PNW [Pacific North West])

Direct Distribution:
Those items that a particular BBS sysop/public cannot do with out,
packaged and sent to that BBS by arraingement with the sending BBS.
Possibly also including DEBATE-topic. Arraingement could include
a subscription period.
Note: This could be helped by a program that does the packaging by
      subject, title, origionator.

PRIVATE:
unchanged.

NTS:
unchanged.

Definition of "Regional Swap", would be those items in the region
catagory (ie: for sale, wanted) that have not been responded to after
being posted in the region. Those items could then be sent to a
central BBS for packaging into a allus bulliten that is sent once a
week or once a month.

While I realise that this proposal has been implimented in some areas
(like PNW), it has not been adopted by a majority of states/areas.
Also please note that I have nothing against the bulliten catagories
in the Regional section and would tend to miss some of them personaly.
The amount of those items by comparison to the purpose of the BBS
system requires that their distribution be limited to reduce the
overload on the BBS system.

OOps I forgot a catagory TRASH: (or Local Only)
                        Those For Sale items which include the words
                        "I will not ship" or "you pick up".

73 de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner

24. BBS Software wishlist

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 9 Jul 1995 22:55:55 -0500
To: netsig@tapr.org
Message-ID: <199507100355.WAA29088@ns1.texoma.com>
Rendered body type: text/plain

A while back, Hank W0RLI asked for ideas, for future BBS software. I had an
idea, but it took awhile to think it through so I've been slow in responding.

CONNECTION STATS:

I've made a side-hobby of setting up and running different BBS software on a
spare computer, to see what they all were like. Every now and then I try out
new versions, upgrades, ect, to try and stay current.
One unusual program I tried out was GTEPMS, written by N2GTE if I remember
correctly. There was a connections stats server program for GTEPMS which
would allow you to point a mouse cursor at a list of forwarding partners and
get a comprehensive set of connection stats for the station you click on..
The feature I'm wanting to point out here was the program's ability to give
out ACTUAL data flow-rate to the distant station over your link. I remember
one of my HF forwardering partner's actual flow rate being 56 baud over a
300 bd packet link during the course of a 30 minute forwarding session, for
example.

I used the info to figure out which HF station on the net I should
concentrate on working with, and at what times, but I remember thinking at
the time that this real-time overall data-flow figure ought to have a lot
more uses.

GUI Packet BBS Access:

As access speeds rise, BBS users will expect to see data-intensive features
such as a graphical interface which are not always appropriate over long,
slow, busy or poor paths. Under those circumstances a simpler interface
would do a lot better job, of course; The old tried 'n true character based
interface we currently use.

You can leave the choice of interface up to your users as a preference, and
I would, since many think that faster is really fancier, while others are
more impressed by bells 'n whistles.. But that can lead to problems! How to
set limits of commen sense without manual intervention, with it's attached
jobs of judge, diplomat, teacher and apologist?

If the BBS software itself were aware of the performance of each individual
link on a real-time basis (buffered a bit), it could use this info to
automatically set an upper limit for the level of interface complexity for
each connect, as it occurred AND in real-time.
If the level of channel activity went up, propagation waned, or the link
degraded for whatever reason, the software would be able to react
intellegently without manual intervention by the SYSOP or User, and the more
data-intensive graphical interface would only be available to stations who's
connection was good enough at that given time, ect.

This would help us break into using more involved interfaces, and also
encourage the users to develop good habits while using the BBS. The GUI
interface, properly limited to common-sense levels will tend to encourage
users to try connecting during times of low activity and over strong links,
clear channels ect... It will give everyone a good idea of whether a
particular path needs improvement or speeding up, and make it easier to get
brains, bux, and backs lined up to get the work done.

Anyway, that sounds like a neat idea to me. I dunno how practical it would
be in the real world.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                          Internet : n5pvl@texoma.com

25. Re: [NETSIG:1418] Re: Censorship and the PBBS (was Internet and LL forwarding)

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sun, 09 Jul 1995 20:51:15 -0700
To: netsig@tapr.org
Message-ID: <199507100359.WAA10299@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>
>
>On Sun, 9 Jul 1995, Jack Taylor wrote:
>
>> >On Jul 7, 2:23pm, Jack Taylor wrote:
>> >> Subject: [NETSIG:1408] Re: Internet and LL forwarding
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>> >So you are suggesting censorship. Oh my, not that again.
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>> nothing more than a label to justify the mind-set of certain sysops in
>> forwarding any and all forms of traffic.
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>do allow all to pass unhindered in the bbs here as my standards are not
>the same as others and I have no right to impress my personal standards
>upon the masses. BTW--that is not a heated up discussion or ranting on
>censorship. It is a personal viewpoint only.
>Asbestos underthings now being donned in grim anticipation. ;->
>Fred   ke8tq

Hi Fred, thanks for the input. I have no intention to flame anyone since it's counter productive to a discussion of this magnitude. First, some background. In a previous msg I mentioned of the 9,000 messages that arrive on our system, local readership is less than 10%, meaning over 8,000 messages every month end up in the unread bit bucket.

>From this, we could speculate our readers are either (A) very defensive and are following your technique by avoiding 8000 plus messages a month that might offend them, (B) just aren't interested in reading the messages, (C) don't have the time to read messages. Another sysop reported his system sees 12,000 messages a month, but he didn't say how many were read.

All of these unread messages month in and month out bother me. Of what earthly purpose do they serve, at least on our BBS? I see a lot of useless traffic occupying space during the forwarding process on our local channels. I'd like to think if these channels were less active, it might encourage more users to come out and chit-chat with each other. If these users aren't bombarded constantly by binary traffic, they might actually have fun. It's possible once the word got out, we would see a significant positive packet growth in our area. In our area, users come and go but the average total has stayed pretty constant ever since the "heavy" BBS forwarding commenced several years ago.

Before the heavy forwarding, we had a fairly active state-wide packet organization. We made friends keyboarding around the network. Elmers appeared that helped the newcomers. Hams were actually able to connect through the network for hundreds of miles, downlink and say hello to friends and others who appeared on the heard lists. If a BBS or NodeOp needed help with his equipment, it wasn't at all uncommon for the group to dig into their pockets to help out. We were an enthousiastic bunch and looked forward to meeting each other at get togethers.

As the packet traffic load increased, it became more and more difficult to keyboard through the network. Over time the group dwindled, the statewide organization disolved and when compressed forwarding started up, the elmers that had hung in there, quit monitoring and went away. We tried different things to revive the "old spirit" but the constant network congestion and poor connectivity seemed to cast a pall over our local activites.

Sure, network upgrades are a solution, but usually just a temporary one when you have aggressive BBS forwarding. It's kind of like a rising tide that never ebbs. Once we thought we had evened out, but then someone made the decision we should be "blessed" with WW traffic and it hasn't slowed down since.

I've been monitoring local activity and user habits on our BBS for several years. In the very beginning, the number of messages read were close to 100 percent. As the traffic count increased, the read ratio deteriated and for awhile held around 40 to 60 percent. Then it started sinking again, a steady decline, and today it's only around 5 percent. Somebody could place a local bulletin advertising free beer, and I doubt if anyone would notice since most of our current users just make use of the system for personal traffic.

Of course other boards may see a different trend. And of course, trends may change. But if the majority of boards are seeing a similar trend as ours, it could benefit the packet community by "moderating" the forwarding of traffic that is of little interest to the majority of users.

Fred, you asked how one would make a determination on what bulletins to "moderate". You said you didn't want to impose your will on the users. This is understandable. But what do you think of having the users make that decision? In fact don't they do that everytime they do a read on a bulletin of a certain subject matter? Isn't the converse true as well?

On your system do you have stats as to how many messages are read each month? Do you have stats showing the ratio of users to bulletins? Of those read, do you have stats on the subjects that are the most popular? Less popular? Totally unpopular?

In the broadcasting business, management decisions as to what is to be aired is typically based on listener polls. Couldn't a similar approach be done with BBS users? Simple formulas could be applied and if the "audiance approval" of a certain bulletin topic fell below the cut-off criteria, it would be dropped from the WW forwarding schedule. Then too, maybe it's discovered certain topics are hot in some areas and cold in others. Couldn't forwarding be set up to accomodate these changes?

My apologies for bringing a predominantly oriented BBS issue to NETSIG, but the philosophy does have an impact on network usage as well. If we can make

a convincing case to "moderate" most of the junk mail, it might encourage
new users to come out and have fun on the packet networks. Besides, TAPR
just announced they are censoring, er, moderating the BBSSIG!

73 de Jack

26. Re: [NETSIG:1425] Re: Censorship and the PBBS (was Internet and LL forwarding)

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 9 Jul 1995 23:53:35 -0500
To: netsig@tapr.org
Message-ID: <199507100453.XAA00998@ns1.texoma.com>
Rendered body type: text/plain

>>
>All of these unread messages month in and month out bother me. Of what
>earthly purpose do they serve, at least on our BBS?

Here, only one user ever looks at AMSAT bulls, and he looks at very few of
those, very seldom. I have no personal interest in them at all.

But I figure that maybe 200 miles or so down the line, there might be a
whole nest of AMSAT guys, who are very happy to get the info and use it all
the time.
I don't mind passing it on to them, despite the fact that the AMSAT stuff is
close to being completely unread and useless here.

Ditto the @WW stuff. Most of it's useless crud to me, but maybe some other
guy will get something useful out of it. I've seen a local user re-establish
a relationship with an overseas friend he had lost touch with that way.. He
saw his old buddy's call on a @WW bull and from what I could tell, he got a
lot out of the experience.

I guess the point is that's it's hard to tell what will or won't come in
handy. If I zapped everything I had no use for myself or which didn't get
read here, that would leave me with a pretty brief message database, and
somebody would suffer down the line for sure.
And, as I said, it's hard to tell what might end up beiing handy, even here!

Ok, I'm a packrat at heart. If it MIGHT be useful, that's good enough for me.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

27. Bulletins vs Mail

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Mon, 10 Jul 1995 09:48:04 -0300
To: netsig@tapr.org
Message-ID: <199507101248.JAA12591@bud.peinet.pe.ca>
Rendered body type: text/plain

In discussing the quantity(and value) of some types of bulletins I
neglected to point out that from what I see, the proportion of Bulletins to
Mail is very high. Since I dont carry @USA or @WW bulletins, I would be
interested in data from Sysops who do as to the ratio of Bulletins to Mail.

I know the name of our system is PACKET-BULLETIN-BOARD but I always thought
the prime function was to pass mail for people. In the beggining we also
carried ARRL, AMSAT bulletins as way of providing additional coverage for
information from accredited Amateur Organizations. It seems that a high
percentage of BBS/Network resources are being used for broadcasting.

In regard to the effects of BBS fwding on Networks, I too find that
increasing Network performance just leads to increased traffic. Those that
have InterNet or other high-speed access can surely handle the 500 or more
bulletins per day but for other more modest Networks the heavy BBS fwding
takes an unfair allotment of Network time.
While many nodes and even whole Networks are built around BBS operations
they are not usually for that SOLE purpose.
As someone recently mentioned, we used to have more keyboard QSO's across
Networks, until (heavy) BBS fwding made that too difficult or just too slow.
That is one reason I have tried to institute responsible fwding using
structured fwding times and types. That way we can Share the Network
resources better.
Another survey might be to ask BBS Sysops what percentage of time (per day)
their BBS spends fwding. If this percentage is high then probably the BBS is
taking too much of the Network's resources.

Also mentioned, was the trend that as the volume of bulletins goes up, the percentage of readership goes down. This would mean then more & more BBS /Network time being wasted.

While there is Some good reading in Some @USA & @WW bulletins, there is no easy way to filter out the junk no matter what criteria you might apply. Remember that many (personal) Packet bulletins do not have (proper) descriptive TO: or SUBJECT: fields.

I wonder what percentage of bulletins @WW and @USA (in all its dozen flavours) are just addressed just TO:ALL?
A few years ago I attemped to import @USA bulletins but didnt want all the FORSALE/WANTED so I put various filters for the TO: field in my Reject file. Well I found that it did cut down on many such bulletins but far too many ForSale bulletins were addressed TO:ALL and so got thru.

Maybe thats why many Sysops dont even bother to control bulletin flow, the Users (originators) cant be bothered to properly format the bulletins so Sysops have a very hard time controlling them.

One idea for BBS authors is to try another type of bulletin control, opposite to the Reject file. Call it the OK.sys file or something but use it to allow only certain types of bulletins (by overriding a complmentary Reject entry).
Say you want to get TO:RSGB @WW but not all other @WW bulletins.
Put TO:* @:WW in Reject.sys and TO:RSGB @:WW in the OK.sys file.
The Catch-22 tho is to know what fields you want, but you can easily turn off the Reject for a day or so any browse thru the titles until you can a sense of what you (and your users) are interested in.

...all this effort in trying to make BBS (and Networks) more efficient reminds me that its a lot of work...mmm...maybe it would be better (read easier) to hook up to InterNet
and just say 'fill-er-up!'.

73 - Ron

28. Re: [NETSIG:1415] Re: Internet and LL forwarding

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 10 Jul 1995 09:30:52 -0400 (EDT)
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <Pine.3.89.9507100914.A26618-0100000@gateway.utilpart.com>
Rendered body type: text/plain

I too am interested in the scatter modes (meteor and tropo) I believe that there is much to be gained by working with these modes, the military people have used them at times exclusivelly, and it has to be due to reliablility, or they would not have stuck with it so long.

I think we are missing something here by viewing VHF/UHF and up as being "line of sight only" What with the more sensitive radios and DSP there is probably a lot of very good paths out there just waiting to be used. I for example know that in the state of florida that the SSB gang talks on 2m ssb all over the state, what is to keep you from trying 1200b FSK or even 9k6 FSK over those same paths. The SSB types do not have a private domain known as tropo, they just use it.

In packet radio we seem to have forgotten that the medium has so great applications in tropo.

I am working on getting a tropo site setup, and hope to soon have something initially on 6m to try tropo, and also will give 2m a try.

I have already done tropo links on 70cm (done with M^2 Enterprises antennas and 100 watt radios. Covered a 57km path with a 1000m obstical on one end using QAM as the data carrier, and FM radios. the system ran at 9k6b, by the way the antennas had gain of 21.5 dBi and 21.75 dBi respectivelly, this was done with commercial gear but it is NO big deal to replicate in the amateur world today. One more FYI, the signal was quite audible in some areas around Guatemala City about 350km from the end that was aimed at Guatemala City.)
So I know that it is quite do-able. We just need some interest on the part of others in doing such things.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

29. Re: [NETSIG:1421] Re: Censorship ..NOT!

From: Gary McDuffie <mcduffie@hannibal.wncc.cc.ne.us>
Date: Mon, 10 Jul 1995 08:48:56 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507100817.A18697-0100000@hannibal>
Rendered body type: text/plain

I see this is on the wrong sig and should be moved back to bbssig.
However, since this is where the discussion is...

I see a real need to have a feature in the bbs software that is missing,
so far. I think a lot of the stations "censoring" what is on their
board, or what is accepted for forwarding by their board, would reject
far fewer bulletins or messages IF there was a way to have the bbs
software handle the traffic but not let it show up as something on the
board. Let it pass through 'without stopping' so to speak. Users
wouldn't see the in-transit disallowed traffic, and the sysop would have
the same option. As a for instance, WW could pass through but not be
subject to listing by anyone. Same for sale/want/trade/etc. If your
area didn't want to have religious content traffic, it could still be
passed to the next guy, but wouldn't have to show up on your board.

If anyone has a wish list, please add this to it.

Gary

30. Re: [NETSIG:1425] Re: Censorship and the PBBS (was Internet and LL forwarding)

From: Gary McDuffie <mcduffie@hannibal.wncc.cc.ne.us>
Date: Mon, 10 Jul 1995 09:19:10 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507100806.A18697-0100000@hannibal>
Rendered body type: text/plain

On Sun, 9 Jul 1995, Jack Taylor wrote:

> I've been monitoring local activity and user habits on our BBS for several
> years. In the very beginning, the number of messages read were close to 100
> percent. As the traffic count increased, the read ratio deteriated and for
> awhile held around 40 to 60 percent. Then it started sinking again, a steady
> decline, and today it's only around 5 percent. Somebody could place a local
> bulletin advertising free beer, and I doubt if anyone would notice since
> most of our current users just make use of the system for personal traffic.

As you know, Jack, I have also spent (and still do spend) a lot of time
monitoring the activity on my board. From my point of view, I find your
figures optimistic. I think that the most active of my users might read
5% of what is there. But the average user reads 1-3% only, and many list
and never read. You are right, people wouldn't show for the free beer.
We have posted all sorts of notices for meetings, dinners, repeater
functions, etc., and have all many people say they never heard anything
about it ahead of time. These are the same people who get on, do a list,
and get off. Even it the subject of the message says FREE BEER!, some of
them don't get the message. I really believe these people are the ones
who are there ONLY because people have convinced them that they should
get on packet (even if not interested), or are there only to receive
personal mail and couldn't care less about bulletins. In some cases, these
are also the people who never send mail.

> Of course other boards may see a different trend. And of course, trends may
> change. But if the majority of boards are seeing a similar trend as ours,
> it could benefit the packet community by "moderating" the forwarding of
> traffic that is of little interest to the majority of users.

>From what I have seen in other areas, I think this is the trend in rural
America. Even in larger cities in rural America, it is the same, at

least according to my exposure. I've been in some of the biggest cities
in Nebraska, Kansas, South Dakota, Wyoming, and Colorado. This is the
way it is in most of them.

> Fred, you asked how one would make a determination on what bulletins to
> "moderate". You said you didn't want to impose your will on the users.

Why not? Who would better know what your users read and don't read than
you, the sysop?

> This is understandable. But what do you think of having the users make that
> decision? In fact don't they do that everytime they do a read on a bulletin
> of a certain subject matter? Isn't the converse true as well?
>
> On your system do you have stats as to how many messages are read each
> month? Do you have stats showing the ratio of users to bulletins?   Of
> those read, do you have stats on the subjects that are the most popular?
> Less popular? Totally unpopular?

Unfortunately, the most popular bbs software in the country doesn't have
that feature.

> In the broadcasting business, management decisions as to what is to be aired
> is typically based on listener polls. Couldn't a similar approach be done
> with BBS users?

Two years ago, I removed all filters on the board and warned my users.
It ran that way for a month. I then asked each of them what they
thought. Two people did not reply. Of the others, all wanted ALL of the
filters returned. This wasn't a matter of congestion, since I installed
an exclusive user port at the same time. This is a matter of community
standards or tastes. What is carried on my board meets standards of the
community (even if they still aren't read).

Gary - AG0N

31. Re: [NETSIG:1427] Bulletins vs Mail

From: Dave Wolf <wo5h>
Date: Mon, 10 Jul 1995 11:04:52 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507101605.LAA17696@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

This thread may be interesting to the Networking folks, but it may be
more appropriate for BBSSIG. Ultimately it's John's call.

The term 'broadcasting' misses the mark when talking about packet
bulletins intended for more than one reader. We had a good
study/education about the term broadcasting, ham radio and how the FCC
defines it one year ago. Take a look at the PSR from last summer.

No individual is obligated to transmit anything he/she doesn't want to.
We are not providing common carrier service. If enough BBS Sysops got
together and agreed to stop carrying 'for sale' bulletins from out of
state, for example, then these types of bulletins may disappear. (This
could be politics or recipes or religion or any other topic; I just
picked for sale since it was a topic that quickly came to mind). I think
most folks would like to see an unobstructed discourse continue as long
as the network and rules permit it. Still, it is not realistic to assume
that we are in competition with commercial e-mail networks. Packet
message forwarding is an excuse to use radio equipment. The message
forwarding is incidental.

Before delving too deeply into whether we should censor bulletin types to
relieve network congestion, how about performing some empirical studies
to find out how our systems performing?
Study one: what percentage of bulletins available on a cross-section of
BBSs are being read? This study would have to be made on a
statistically-significant number of BBSs at various spots around the country.
Study two: originate P,B and T type traffic from one station, targeted
for a variety of other stations and observe percentages of total
delivered and length of time for delivery.

Maybe some of the more curious can come up with software to automatically
perform such studies and spearhead an effort to implement them.
Would make a great paper for the 1996 TAPR annual meeting or Digital
Communications Conference.

Sure beats assuming anything.

Dave WO5H

32. Re:Bulletin control

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Mon, 10 Jul 1995 13:20:25 -0300
To: netsig@tapr.org
Message-ID: <199507101620.NAA02357@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>I see this is on the wrong sig and should be moved back to bbssig.
>However, since this is where the discussion is...
>

Yes Gary but since bulletin fwding is a major part of Network traffic is does
apply here (IMHO), but I'm willing to switch SIGs as necessary.

>I see a real need to have a feature in the bbs software that is missing,
>so far. I think a lot of the stations "censoring" what is on their
>board, or what is accepted for forwarding by their board, would reject
>far fewer bulletins or messages IF there was a way to have the bbs
>software handle the traffic but not let it show up as something on the
>board. Let it pass through 'without stopping' so to speak. Users
>wouldn't see the in-transit disallowed traffic, and the sysop would have
>the same option. As a for instance, WW could pass through but not be
>subject to listing by anyone. Same for sale/want/trade/etc. If your
>area didn't want to have religious content traffic, it could still be
>passed to the next guy, but wouldn't have to show up on your board.
>
>
>If anyone has a wish list, please add this to it.
>
>Gary
>
FBB has the ability to set the lifetime of bulletins by TO, @ fields
separately so you could set the liftime of @WW bulletins to 1 day.
However this does not help the Network traffic loading as the BBS not only
receives all the @WW bulletins but re-transmits them as well.

On InterNet not all servers carry ALL the Newsgroups (bulletins), here for
example we dont get any alt.binaries (not to mention the alt.sex, etc)
So even on the InterNet SysOp review what is carried & fwd'd on their systems.
73 - Ron
ve1aic

33. Scatter, Tropo

From: n5pvl@texoma.com (Charles Brabham)
Date: Mon, 10 Jul 1995 11:02:06 -0500
To: netsig@tapr.org
Message-ID: <199507101602.LAA25818@ns1.texoma.com>
Rendered body type: text/plain

>I too am interested in the scatter modes (meteor and tropo) I believe that
>there is much to be gained by working with these modes, the military
>people have used them at times exclusivelly, and it has to be due to
>reliablility, or they would not have stuck with it so long.
>

True, in that something that works part of the time is a lot more reliable
than something which doesn't work at all.

I dunno.. I've used tropo ducting before over a 120 mile path along the
Texas gulf coast, and didn't find the reliability I was wanting. It worked
well, but not every day. Weather and time of day seemed to have a strong
effect on it, and sometimes it just wasn't there at all for weeks or months
at a time.
When we put up nodes to cover that path, we ended up looking for inland
sites so all that dirt would soak up hurricane damage and give the nodes a
better chance to be useful in an emergency. We had a tower site right on the
coast, but didn't use it in the long run.

I would imagine there are locations where it's easier to take advantage of,
and is much more reliable. If it's reliable and works well where you live,
you're lucky and are really missing out if you don't utilize it.

I have never heard of anyone finding the reliability needed to use it every
day, year round. On the other hand, I've seldom traveled very far outside of

Texas, and there's a lot of planet out there.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                       Internet : n5pvl@texoma.com
" If you can't explain what you're doing to a child, you probably don't have
a very firm grasp of it yourself. "

34. Re: [NETSIG:1410] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 09:59:23 PDT
To: netsig@tapr.org
Message-ID: <9507100959.ZM5949@hanko>
Rendered body type: text/plain

On Jul 7, 5:33pm, Howard Goldstein wrote:

> With the move to NETSIG, perhaps the baggage of the old arguing can be
> left behind on BBSIG, forgotten. I would like to ask two questions to you
> folks, that is, if all the alternate methods were dumped years ago and we
> were doing our forwarding between major and mid-sized metropoli on HF, how
> many stations would be involved and how many connections would each be
> making to different stations to create a forwarding network?

The original ARRL sponsored planning showed roughly a dozen regional
HF systems. This may be a bit low, due to the requirement for a
backup network as well as a primary. With modern HF modulation
techniques, I think this number is still viable.

> The other question is a two parter, can we satisfy those critics of the
> present system that we do not have a network absent realtime
> transcontinental connectivity for end users, and if so, how?

Of course not, it is not a valid argument. The only thing folks are
quibbling about is the response time and specific applications supported.
Once we were able to support, for example, keyboard chats with, for example,
less than 5 minute rtt then the prospect of realtime audio would be raised.

It is my observation that the vast majority of hams (well over 90%)
are not interested in keyboard chats. FM voice repeaters are much
better at this locally, and HF SSB is much better at it on long haul
paths. Were there more interest, then the folks interested would be
pitching in to help build the network they want.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

35. Re: [NETSIG:1411] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 10:02:25 PDT
To: netsig@tapr.org
Message-ID: <9507101002.ZM5972@hanko>
Rendered body type: text/plain

On Jul 7, 6:46pm, Bob Nielsen wrote:

> It was my understanding that the h.f. automatic forwarding networks
> only accepted messages addressed to a specific station, not all the
> all@everywhere, etc. stuff which clogs the BBSs so much that I almost never
> issue a 'list' command anymore. Is this not the case?

This is not the case. At least in the HF network in which I am
personally involved, any and all traffic is supported. i.e. we
do not censor the traffic in any way at all, other than to make
certain part 97 restrictions are followed.

A specific exmple: I forward every single "@ USA", "@ AMSAT",
and "@ ARRL" bulletin to W5XO, per the request of his users.

   ... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

36. Re: [NETSIG:1412] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 10:05:08 PDT
To: netsig@tapr.org
Message-ID: <9507101005.ZM5977@hanko>
Rendered body type: text/plain

On Jul 7, 7:34pm, Klarsen wrote:

<deletia>

> I want to get the mail from Tom-ham to Pete-ham there asap. If
> you look it's just that mail which is jamming up 20 meters. I don't think
> a single bulletin passes on that band now. Same with 30 meters.

See my previous comment re HF links. I forward most all bulletins
to W5XO (at the request of his users) on HF. It doesn't "clog"
anything, and in fact is only done during otherwise "system idle"
time (after all personal and nts traffic has cleared).

> A typical day will see my bbs with 250 new bulletins and 6 mail
> things. So the bottom line is stop the long distance bulletins. But I
> have users that have like them.....

What are "... mail things." ??

   ... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

37. Re: [NETSIG:1415] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 10:14:26 PDT
To: netsig@tapr.org
Message-ID: <9507101014.ZM5982@hanko>
Rendered body type: text/plain

On Jul 8, 1:28pm, Howard Goldstein wrote:

> > My impression is that the STA did have a limiting effect on forwarding, at
> > least initially.
>
> I received private email from an STA participant this morning and felt it
> worth emphasizing that criticism of the STA extends only to the process
> that allowed it to go on for so long as a temporary, closed group measure,
> and does not include criticism of the dedicated individuals who comprised
> the STA group.

In the view of all the participants (and I did talk to all of them) the STA
process was a disaster. Had it followed even close to the original plan,
we would have started to build a viable HF network in 1986 or 1987, well
before the HF forwarding situation got "out of control". As things turned
out, the majority of the folks that wanted to take part in building HF networks
were effectivly "locked out" of participation due to the slow progress in
turning the STA into part 97 rule changes.

   ... Hank

--

```
Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

38. Re: [NETSIG:1421] Re: Censorship ..NOT!

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 10:50:27 PDT
To: netsig@tapr.org
Message-ID: <9507101050.ZM6062@hanko>
Rendered body type: text/plain

On Jul 9, 8:41pm, Ron VE1AIC wrote:

> In my view "censorship" does not apply to bulletins since they are
> Broadcasting.

I've seen this term used from time to time to describe bulletins.
However, the FCC regulations are a bit different: bulletins are
not broadcasting, but are third party traffic between specific
hams (they are always sent directly from one callsign to another).

Perhaps the Canadian regulations handle this differently?

Here is yet another topic for this group: can we establish some
better knowledge of how different countries handle the "one to many"
traffic represented by bulletins? Once we have discovered how the
regulations differ from place to place, can we come up with some
procedures that will smooth the flow of bulletins around the world.

Two specific examples: Australia prohibits religious and political
content in messages; Germany prohibits buying and selling.

Do we now tag traffic well enough so the forwarding stations on
the boundaries can pass what can be passed while not passing what
must be restricted?

   ... Hank

--

```
Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

39. my 5GHz comment

From: bruce@pixar.com (Bruce Perens)
Date: Mon, 10 Jul 95 11:01 PDT
To: netsig@tapr.org
Message-ID: <m0sVN8g-00063ZC@mongo.pixar.com>
Rendered body type: text/plain

This is the final version of my comment on Apple's NII Band proposal. It's
a bit different from the one I posted to tcp-group last week, due to the
comments of the people who read it.

        Thanks

        Bruce Perens AB6YM

                            Before the
                    FEDERAL COMMUNICATIONS COMMISSION
                           Washington, D.C.

```
In the Matter of                  )
                                  )
Allocation of Spectrum in the 5   )     RM-8653
GHz Band to Establish a Wireless  )
Component of the National         )
Information Infrastructure        )
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          COMMENT OF BRUCE PERENS ON THE APPLE NII BAND PETITION

Submitted: July 8, 1995

Submitted by: Bruce Perens
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Internet: Bruce@Pixar.com

I. INTRODUCTION

1. As I write, there are 32,785 Amateur Radio stations registered in the Internet address database as users of the Internet TCP/IP communications protocol over radio.[1] There are hundreds of thousands of Amateur Radio stations participating in radio digital networking. About 15 years ago, the operators these stations invented the community radio networks and radio "on-ramps" to the Information Superhighway that Apple proposes as a new innovation. The operators of these stations are waiting for the opportunity to expand the services they currently are allowed to provide only to Radio Amateurs to include the general public.

2. Apple's proposed "NII Band" service is attractive to many individuals who are currently Amateur Radio digital network operators, because it would not impose the many legal restrictions that they currently must tolerate within the Amateur Service. In this document, I go over some of these restrictions and show the advantages that would be gained if current Amateur digital network operators were to operate in the proposed NII band and serve a much wider audience.

II. DISCUSSION

1. Apple proposes what it calls "an entirely new application of wireless networking: the community network". Of course, this is the sort of network that has been operated since 1981 in the Amateur Packet Radio service under Part 97 of the FCC rules. I currently operate a "gateway node" in such a network, serving the East Bay portion of the San Francisco Bay area.

2. The most important service of my gateway is that I provide local Radio Amateurs with access to the Internet at no charge, via radio. The primary reasons I have for operating my gateway system are the personal gratification I get from community service, the opportunity it provides me to learn about computer networking, and the chance for improved communication with my community and the world. The users of my gateway have the benefit of all of the opportunities provided by wireless access to the Internet.

3. Unfortunately, there are many regulatory impediments placed on my gateway. Most importantly, I am restricted to providing service only to Radio Amateurs, when there are many people in my community who could benefit from the service I provide. Even when I communicate only with Radio Amateurs, there are many restrictions on who I can talk to and what I can talk about. Under part 97.219d of the FCC rules, I am accountable as "the first forwarding station" for violations carried out by the users of my gateway. There are many possible violations: for example, under 97.3a(10) if a message is sent using a broadcast communications protocol, that message "must not be of interest to the general public". Under 97.113a(5), there may be no "communications, on a regular basis, which could reasonably be furnished alternatively through other radio services." 97.113a(2) prohibits communications for hire, and 97.113a(3) bans messages for one's employer or those in which the sender of the message has a pecuniary interest.

4. Another serious restriction upon my digital radio network operations is imposed by the 97.115 rules on third-party communications. My gateway station isn't allowed to carry a message for a third party in another country unless there is a special treaty between that country and the United States regarding Amateur Radio communications. Unfortunately, there are many countries that haven't signed this special treaty with the U.S., but almost every country is a party to

an International Telecommunications Union treaty that would allow such messages to be carried over the NII Band.

5. Because of the chilling effect the above restrictions have had upon Amateur Radio digital networks, the prospect of a service capable of medium-distance communications, over which I can discuss any decent subject, with anyone I please, is very attractive. If such a service were to become available, I would start a networking operation similar to the one I now have on the Amateur bands, and enjoy a new freedom of communication as well as the ability to serve and communicate with a much larger portion of the public.

6. The Apple proposal does not pay sufficient heed to the prospect that individuals and community groups would want to build and operate networks using the NII Band, not as a business activity but for community service, education, and personal gratification. Apple states that they expect that the NII Band networks will be outgrowths of current networks built by telephone and cable companies, broadcasters and satellite operators. These kinds of companies might more appropriately be using licensed bands that they have acquired the rights to through frequency auctions. It's easy to see how broadcasters, phone companies, and cable operators could monopolize a service such as the NII band, even though such a band would only be available to packet-switched services. They could simply fill the band with enough information, radiated power, and individual transmitting stations to use up all available bandwidth and time-slices in which others could transmit. Schools, libraries, and individuals, with their modest operations, would simply be squeezed out of the band.

7. Apple states that the operating conventions and rules for the NII band should be developed by the information industry. They ignore that community radio networks have been operated for 15 years by the Amateur Service, and that many of the problems of operating such networks have already been dealt with by Radio Amateurs. Although Apple actively cooperated with the American Radio Relay League during the recent 2400 MHz PCS proceedings, they did not seek the cooperation of Radio Amateurs by consulting them before filing this petition. Radio Amateurs have much to contribute to the planning of the new NII Band service because they have experience in operating a similar, though smaller, service for more than a decade. We would like to be consulted as the planning for the NII band continues.

8. In summary, I see merit in the Apple proposal, because it would allow the successful efforts of Radio Amateur digital network operators to be broadened to serve the entire public. I find fault in the Apple proposal in that it does not consider the part that individuals and community groups could play in network operation, and considers it the exclusive domain of large business entities.

REFERENCES

[1] I arrived at this number by counting the number of address records in the Internet address database under the AMPR.ORG domain. AMPR stands for Amateur Packet Radio, and is the Internet address domain reserved for Amateur Radio operations. The AMPR.ORG address database is managed by Mr. Brian Kantor of the University of California at San Diego. The database may be retrieved via Internet FTP to ftp.ucsd.edu:/hamradio/ampr.org . Mr. Kantor may be contacted using E-mail, his address is Brian@Nothing.UCSD.edu .

* * *

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-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

40. Re: [NETSIG:1424] BBS Software wishlist

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 11:03:00 PDT
To: netsig@tapr.org
Message-ID: <9507101103.ZM6090@hanko>
Rendered body type: text/plain

On Jul 9, 11:07pm, Charles Brabham wrote:

Won't duplicate the entire message, just a couple comments.

> Subject: [NETSIG:1424] BBS Software wishlist
> A while back, Hank W0RLI asked for ideas, for future BBS software. I had an
> idea, but it took awhile to think it through so I've been slow in responding.
>
> CONNECTION STATS:

Good idea, and fairly simple to implement. Will probably add it to
my next release. This is one of those "why didn't I think of that!"
kind of ideas. Thank you!

> GUI Packet BBS Access:

Seems to me there are a whole herd of issues here, but it also seems to
me there will soon be a fairly good solution to some of what you suggest.

One way to do most of this: put the modern tcp/ip applications on air.
I've done this at home, with Netscape/Mosaic access over ham radio.
This is the same stuff folks will have available directly with Win 95 ...

My question is fairly simple: should we authors concentrate on the
low level stuff (e.g. drivers for packet under Microsoft tcp/ip) and
allow the existing "bbs network" to wither away with time. Once most
hams run OS which have "native networking" it might be most cost
effective for us authors to concentrate on hooking that "native
networking" to radios and existing radio networks. This track is
what I'm currently investigating.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

41. Re: [NETSIG:1429] Re: Censorship ..NOT!

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 10 Jul 95 11:08:34 PDT
To: netsig@tapr.org
Message-ID: <9507101108.ZM6102@hanko>
Rendered body type: text/plain

On Jul 10, 10:12am, Gary McDuffie wrote:
> Subject: [NETSIG:1429] Re: Censorship ..NOT!
>
> I see this is on the wrong sig and should be moved back to bbssig.
> However, since this is where the discussion is...
>
> I see a real need to have a feature in the bbs software that is missing,
> so far. I think a lot of the stations "censoring" what is on their
> board, or what is accepted for forwarding by their board, would reject
> far fewer bulletins or messages IF there was a way to have the bbs
> software handle the traffic but not let it show up as something on the
> board. Let it pass through 'without stopping' so to speak. Users
> wouldn't see the in-transit disallowed traffic, and the sysop would have
> the same option. As a for instance, WW could pass through but not be
> subject to listing by anyone. Same for sale/want/trade/etc. If your
> area didn't want to have religious content traffic, it could still be
> passed to the next guy, but wouldn't have to show up on your board.

I suspect all "us authors" keep wish lists ...

This sounds like an interesting way to handle the situation, and
would not be at all hard to implement.

Might it be better to give the users control over what they see
or don't see? I've had a couple requests to implent user configurable
"interest lists" (oh no, does this sound like usenet news? of course
it does). I'll implement something along these lines later this year.

It would work like this: each user can specify which To: or "@ BBS"
tags they wish to see, or which ones they wish to ignore.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

42. Re: [NETSIG:1431] Re: Bulletins vs Mail

From: jra@ag9v.ampr.org
Date: Mon, 10 Jul 1995 13:42:55 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507101742.NAA18997@ag9v.ampr.org>
Rendered body type: text/plain

You (Dave Wolf) write:
>
>This thread may be interesting to the Networking folks, but it may be
>more appropriate for BBSSIG. Ultimately it's John's call.

Well, NETSIG has been pretty quiet for a while but I do think this is much
more related to the philosophy and practice of BBS operation than the physical
network layer, which is NETSIG's charter.

We build 'em, you use 'em if you want!

John AG9V
NetSIG facilitator

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

43. Re: [NETSIG:1434] Re: Internet and LL forwarding

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 10 Jul 1995 11:22:11 -0700
To: netsig@tapr.org
Message-ID: <199507101830.NAA21014@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>On Jul 7, 5:33pm, Howard Goldstein wrote:
>
>> With the move to NETSIG, perhaps the baggage of the old arguing can be
>> left behind on BBSIG, forgotten. I would like to ask two questions to you
>> folks, that is, if all the alternate methods were dumped years ago and we
>> were doing our forwarding between major and mid-sized metropoli on HF, how
>> many stations would be involved and how many connections would each be
>> making to different stations to create a forwarding network?
>
>The original ARRL sponsored planning showed roughly a dozen regional
>HF systems. This may be a bit low, due to the requirement for a
>backup network as well as a primary. With modern HF modulation
>techniques, I think this number is still viable.
>
>> The other question is a two parter, can we satisfy those critics of the
>> present system that we do not have a network absent realtime
>> transcontinental connectivity for end users, and if so, how?
>
>Of course not, it is not a valid argument. The only thing folks are
>quibbling about is the response time and specific applications supported.
>Once we were able to support, for example, keyboard chats with, for example,
>less than 5 minute rtt then the prospect of realtime audio would be raised.
>
>It is my observation that the vast majority of hams (well over 90%)
>are not interested in keyboard chats. FM voice repeaters are much
>better at this locally, and HF SSB is much better at it on long haul
>paths. Were there more interest, then the folks interested would be
>pitching in to help build the network they want.
>
>   ... Hank
>
>Hank Oredson @ Mentor Graphics   Library Operations
>Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
>Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

Uh, wellllll if BBS forwarding occupies most of the available channels, then
you will find little interest in keyboarding. In every case I've seen (This
is not a put-down, merely an observation) when new channels DO become
available, it's only a heart-beat before every BBS within range adds a new

port so he can "service" this new resource! Then it's just a matter of time before you are back to square one.

I think this BBS issue is a two-edged sword. It's nice to have SOME of the features and the users appreciate the availability. However too MUCH of a good thing is what's killing amateur packet and in part, forcing the internet trend.

One test as to the popularity of keyboarding is to check out the amateur converse servers on the internet gateways. Everytime I've looked, they are quite crowded.

73 de Jack

44. Re: [NETSIG:1438] Re: Censorship ..NOT!

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 10 Jul 1995 14:41:46 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507101403.A29629-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Many countries have prohibitions on both political/religious and buy/sell types of traffic. And in THIS country many sysops will kill non-english language traffic, so I suppose we need to have some sort of language ID also to facilitate the routing of non-english traffic through this country.

Sure gets messy doesn't it?

Chuck Hast e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077

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45. Re: [NETSIG:1433] Scatter, Tropo

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 10 Jul 1995 15:08:50 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507101401.A29918-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Well, I have seen those type of conditions, but generally I have found that that type of fading was due to the signal litterally moving around or moving on and off target, there are several ways around this problem, one being to use diversity reception, another being to use vertical polariztion and have a relativelly wide vertical lobe on the antennas, the signal will tend to drop down but not be lost.

I have come to observe that on good tropo links there will be short fades, but in general the path is always there. Those that have long term fading either generally do not have the antennas aimed right, or they are streaching things too much.

I am looking forward to working with tropo again as a viable part of the network paths. I still personally think we are missing out on a reliable communications system by not learning more about it. I tend to believe that FSK and PSK systems can probably give us reasonable across state and region paths at higher speeds than the present HF 300b systems give us.

I hope to be able to add more to this as I obtain the equipment needed to set up some tropo paths.

I already have one taker as a terminus on 50mhz. This being N4KOX Russ in Jacksonville, FL. We are going to try to set up a link between our respective LAN's on 6m. He has already obtained some Motorola MaxTrac radios for work on his end, I am trying to locate simular radios for the Tampa end. We are planning on trying FSK at whatever baudrate we can get.

Again we figure that if we can get signal levels simular to those
obtained by the SSB ops between Tampa and Jacksonville we will be able to
run a nice network link between the two ends.

Next stop will be 2m tropo.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
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46. Re: [NETSIG:1431] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 10 Jul 95 15:31:55 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c18@ram.net>
Rendered body type: text/plain

The networking issue that is really sticking out is that people are not using
the network.

What were to happen if you had the BBSs specialize to specific topics and
have the users USE the backbone to access the bbs they want?

There are 20 BBS's I can access within a few network hops and they all have
mostly the same tired bulletins...

I think we need to take the BBS's off the user channels and tuck them away IN
the backbone and then users from a larger area have equal access to them.

If you cry that having USEER traffic on the backbone would be worse, go look
at the message READ counters and see how many times FEWER each bulletin would
be sent...

Personal mail should be sent the same way... to a local system
(i prefer not to have anything on the User Access channel, other than user
stations)

tom

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

47. PK-88

From: rishmael@halnet.com (Rex H. Ishmael)
Date: Mon, 10 Jul 1995 14:45:42 -0500
To: netsig@tapr.org
Message-ID: <199507101950.AA24281@interlock.halnet.com>
Rendered body type: text/plain

Maybe this is not the type info needed or passed here, as I have not seen
any thing of this nature in some time, but in the interest of RF networks
and extending or improving them, I have been asked if I could convert a
PK-88 to run Thenet X1J... I am not a strong technical type but am willing
to try anything, but first the easy way, has any body done this and what is
the mod?
==========
Rex Ishmael, Environmental Engineer, Halliburton Energy Services
E-Mail:rishmael@halnet.com
Amatuer Mail: WD0AJG@WD0AJG.#SCOK.OK.USA.NOAM
Office=(405)251-2298 (hardly ever there, but leave a msg!)
==========

48. Re: [NETSIG:1443] Re: Internet and LL forwarding

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 10 Jul 1995 16:12:26 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507101545.A562-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Mon, 10 Jul 1995, Jack Taylor wrote:

> Uh, wellllll if BBS forwarding occupies most of the available channels, then
> you will find little interest in keyboarding. In every case I've seen (This
> is not a put-down, merely an observation) when new channels DO become
This is indeed the case, and has caused several network groups to keep
BBS operations off of their networks.

In many areas BBS sysops and users both have the belief that the Packet
Network IS the BBS network. Indeed we have a small network south of the
Tampa bay area that was setup for BBS only operations leaving the poor
keyboard users to a much slower and less well connected, older "flat
network" which would drop links ect.

> available, it's only a heart-beat before every BBS within range adds a new
> port so he can "service" this new resource! Then it's just a matter of time
> before you are back to square one.
How true, this all goes back to the observation that BBS are the network,
which they are not, they are power users on the network, and perhaps you
could call BBS a network on top of a network but BBS do not the packet
network make.

>
> I think this BBS issue is a two-edged sword. It's nice to have SOME of the
> features and the users appreciate the availability. However too MUCH of a
> good thing is what's killing amateur packet and in part, forcing the
> internet trend.
Amen! we have BBS in this area that want a dedicated frequency totally
negating the multiplexing of users and applications. And with the paltry
number of frequencies available for packet radio, it becomes a must to
get multiple systems on a channel, of course trying to keep in mind
hidden terminal ect.

>
> One test as to the popularity of keyboarding is to check out the amateur
> converse servers on the internet gateways. Everytime I've looked, they are
> quite crowded.
Quite true, we also observe the large number of links going thru our
wormholes here in Tampa. I see stations connecting thru the switches in
our area some of them are going just from one part of the state to the
other, others are going through the links that have been provided on space
available on some commercial lines, (fibre folks, not radio but it does
serve a need until we have the RF to those distant places) but the key to
the usage of these paths by keyboarders is the low level of BBS
forwarding that goes on over these same paths, the keyboarders have good
turnaround times and the network does not drop them due to saturation.

The network is a homogeneous network (ROSE) allowing users to establish
a connection with the target station with a minimum of problems. Control
of streams of data going through the network also helps allow the
keyboarders and other similar users to have a better throughput even with
heavy BBS forwarding. By having limits on how much memory a given circuit
can have through a switch other circuits flowing through that switch also get
a shot at a piece of the action.

Keeping the BBS forwarding to reasonable levels has helped greatly in
keyboarder usage. We also see users coming into the local converse server
(ko4ks TNOS system here in Tampa) from distant parts of the network,
sometimes from areas which are supposed to be served by similar systems, but
it appears that the RF network reliability with reasonable constraints on
BBS activity added to the reliable converse system locally have made for
a large base of keyboarders.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
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49. Re: [NETSIG:1446] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 10 Jul 1995 16:23:03 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507101654.C562-0100000@gateway.utilpart.com>
Rendered body type: text/plain

That is what is happening in the Tampa area, little by little people are figuring out that putting the BBS behind the network is a more viable way of doing things. Only thing is that seems every new packet op out there wants to put up a BBS...what a wast of good spectrum...

50. Censorship vs Editing

From: Andrew Funk <kb7uv@panix.com>
Date: Sun, 09 Jul 1995 13:53:38 -0400
To: bbssig@tapr.org, netsig@tapr.org
Message-ID: <199507102051.QAA23083@panix3.panix.com>
Rendered body type: text/plain

[This is posted to netsig and bbssig because the postings to which I am replying were mainly on netsig, but I feel this discussion is a bbs issue and belongs on bbssig. Please direct replies there!]

When the media (newspapers, commercial radio & tv, magazines, etc.) decide whether or not to publish something they are exercising editorial control, not censorship.

If a PBBS states to its users, up-front, that bulletins are subject to editorial control that's fine, and it's much the same as the other media.

However, if a PBBS does not have an up-front statement of editorial policy then users have every reason to expect that their postings will be accepted. To not accept a posting without an up-front statement of editorial policy is indeed censorship.

The real problem, however is with forwarding.

Users expect that if their message or bulletin is accepted by their local PBBS then it will be forwarded to its destination. This is a reasonable expectation. It is quite understandable for users to consider deliberate interference with the delivery of their message, based upon its content, to be censorship.

When my PBBS was operational I considered it my responsibility to forward each and every message and bulletin received (with the singular exception of those few messages which could, qithout question, subject me to FCC acton). I forwarded many messages and bulletins which contained content I found offensive. Nonetheless, I passed them along as I considered that to be my responsibility.

As I see it, the reason we have this debate is that too few sysops have established (and enforce) editorial policies.

What may be needed is an editorial policy that the majority of PBBS sysops could agree to and enforce on messages originating on their system.

I suggest that those who feel there are messages and/or bulletins being handled by the PBBS forwarding network which don't belong should work together and come up with a recommended editorial policy for the group's consideration and possible implementation.

Commnents?

73, Andy
--

 _____________________ Andrew Funk, KB7UV _____________________
| Tech Producer/Editor   Internet: kb7uv@panix.com |
| WCBS-TV Channel 2 News   http://www.webcom.com/~arfunk/ |
| New York, NY USA   --- INSERT COMMERCIAL HERE --- |

51. Re: [NETSIG:1424] BBS Software wishlist

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Mon, 10 Jul 1995 22:55:15 +0200
To: netsig@tapr.org
Message-ID: <199507102055.WAA07607@unix10.pressimage.fr>
Rendered body type: text/plain

>A while back, Hank W0RLI asked for ideas, for future BBS software. I had an
>idea, but it took awhile to think it through so I've been slow in responding.

Should'nt this message be posted to BBSSIG instead of here ???

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
> F1JKJ@planete.net <
Fidonet 2:323/27.1
Compuserve ID 100407,436

52. My NII Band Comments

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Mon, 10 Jul 1995 16:31:26 -0700
To: fccreg@tapr.org (TAPR FCC Regulatory List),
netsig@tapr.org (TAPR Networking List)
Message-ID: <v02120d1eac276864ed7e@[204.118.182.22]>
Rendered body type: text/plain

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Allocation of Spectrum in the 5 GHz Band	)	RM-8653
To Establish a Wireless Component of the	)	
National Information Infrastructure	)	
	)	
In the Matter of	)	
	)	
Petition for Rulemaking to Allocate	)	RM-8648
the 5.1 - 5.35 GHz Band and Adopt	)	
Service Rules for a Shared Unlicensed	)	
Personal Radio Network	)	

COMMENTS OF DEWAYNE HENDRICKS

I wish to submit these comments to the petition for rulemaking filed by Apple Computer, Inc. ("NII Band Petition"), and by the Wireless Information Networks Forum ("WINForum Petition), in the above referenced matters. I am filing as an individual and a long time member of the amateur radio service (ARS). I strongly support the NII Band Petition and urge the Commission to take the necessary actions necessary to make this proposal a reality as soon as possible.

The ARS began with a few experimenters in the early 1900s and has grown to more than 700,000 licensed operators in the United States alone. Amateur Radio represents principles of radio communications that have endured and advanced since the days of the earliest radio pioneers. Part 97 of the Commission's rules sums it up the best by stating these principles [97.1 (a) (b)]:

Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

For more than eighty years, hams have carried on a tradition of learning by doing, and since the beginning have remained at the forefront of technology. Through experimenting and building, hams have pioneered advances, such as techniques for single sideband (SSB) transmissions, and are currently engaged in state-of-the art designs in packet radio and spread-spectrum technologies. Hams' practical experience has led to technical refinements and cost reductions beneficial to the commercial radio industry.

Over the years, it has been the Commission's obligation to see that the rules that regulate the ARS allow room for amateurs to move in new directions so they can live up to their potential for advancing technical

and communications skills. The ARS is constantly changing to meet the new challenges brought forth by new technologies, and dynamic and flexible rules as embodied in Part 97 provide for this.

In my opinion, the NII Band petition represents a way for the general public to participate in this communications revolution that has been exclusive playing field of the ARS for so many years. It is now up to the Commission to craft and create a new service that incorporates the principles and experience of the ARS, with the innovative guidelines proposed by Apple in its petition. Doing so would create a new service where communications and computing technologies will be available without regard to geography, income level, educational level, or organizational size to everyone in the United States. In particular, schools, colleges and universities must have access to advanced communications and computing technologies if they are to prepare our students to participate fully in, and contribute to, tomorrow's information-based economy. The recent recognition of the growth of the world-wide Internet has brought home to many that there is an increasing requirement for access to technologies that are broadband (capable of supporting, for example, videoconferencing and multimedia applications), flexible (capable of being used efficiently to maximize the benefits of limited resources), and affordable (capable of being installed and used on the budgets available to the average American).

If our society's communications needs are ever to be fulfilled, new options must be explored. One such option of note is the Part 15 unlicensed service. Since the rules for this service went into effect in 1985, the success of Part 15 unlicensed technologies has far exceeded the early expectations of many. Today, we see a market for these technologies that is comprised of millions of devices, hundreds of applications, scores of different technologies, and an untold number of dollars in investment. The experience that we all have seen with this service should serve as a useful platform to use for building the new NII Band.

As Apple notes in its petition there are problems with the Part 15 service as it is now. The unlicensed technologies are subject to certain constraints that will inhibit them from satisfying the growing need for wireless communications services. Under the Commission's rules, these devices must not cause interference to other non-Part 15 users of the spectrum that they share and they are not themselves protected from interference. As a result, many advanced applications, and those requiring extremely high reliability, have so far remained tethered to wireline services. As these technologies become more sophisticated and ubiquitous, this lack of interference protection will become more critical. This condition calls all the more for the creation of the NII Band which I feel will address most of the problems of today's Part 15 unlicensed service and provide a workable solution.

As I have said, the rules governing the operation of the NII Band should be broad enough to encompass a wide variety of wireless devices. While very high speed devices may be necessary for the implementation of certain technologies and communications methods, their use in the NII Band should not be required so as to foreclose the band to other technologies. For this reason, I feel that the petition filed by Apple is far superior to that of WINForum. It appears to me that the WINForum petition favors rules that will restrict the technologies used in the NII Band towards the European HIPERLAN standards. In my opinion, the Apple petition proposes an allocation and usage approach that while accommodating the requirements of HIPERLAN, would also foster the development of new and more innovative technologies. Further, the rules proposed by Apple would assure that all devices retain an equitable right to access and share the spectrum resources. Such equitable access is necessary for at least two reasons. First, service rules that favor certain configurations or technologies will bias future development efforts towards those configurations and technologies and will therefore limit the scope of innovations possible in this band. If any one type of transmission method is given priority in the band, then many of the advantages of this new service will be lost. Experience in the Part 15 bands clearly demonstrates that technology will adapt to the spectrum environment as it finds it. As long as the service rules provide for an even "playing field", a multitude of different services using this band will thrive and any artificial regulatory "slights of hand" by the Commission will be unnecessary.

In conclusion, it is my feeling that the NII Band petition provides the basis for a great public experiment which if successful will provide one of the cornerstones for the proposed National Information Infrastructure (NII). The important principles embodied in the Apple petition should guide the Commission in creating an NII Band, particularly if it is to employ spectrum at 5725-5875 MHz in which both Part 15 and ARS technologies are currently being developed and deployed. The combination

of adequate spectrum and efficient pragmatic spectrum sharing rules should create an environment in which this new service with its innovative technologies could thrive.

For the reasons stated herein, I wish to support the petition for rulemaking filed by Apple Computer, Inc.

Respectfully submitted,

_____
Dewayne Hendricks WA8DZP

Warp Speed Imagineering
43730 Vista Del Mar
Fremont, CA 94539-3204

July 7, 1995

Dewayne Hendricks, WA8DZP ! CIS: 75210,10 AppleLink: D6547
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43730 Vista Del Mar ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204 ! AOL: HENDRICKS
Fax: (510) 770-9854 ! WWW: http://www.warpspeed.com/

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53. BBS and keyboarding

From: n5pvl@texoma.com (Charles Brabham)
Date: Mon, 10 Jul 1995 19:00:02 -0500
To: netsig@tapr.org
Message-ID: <199507110000.TAA09943@ns1.texoma.com>
Rendered body type: text/plain

I have seen certain freqs fall into usage disputes, but for the main part I've seen a lot more cooperation and level-headedness than anthing else.

In my area, (TX/OK stateline, near Sherman, TX.) we actually use four "different" networks; AX25, ROSE, TexNet, and TCP/IP. When I moved into the area and set up the first full-service AX25 BBS here, I was told that The ROSE net was for keyboarders only, that TCP/IP didn't get along with AX25 stuff and thier freq should be avoided by AX25 BBS's, and that AX25/NetRom was ok, but only if you can't get the job done on TexNet.

It made sense to me! I have a port on my BPQ switch which allows access to the local ROSE freq, but I keep my beacons to a minimum and do no forwarding there, even though there are NetRom nodes there which would take me in the direction I'm wanting to forward in. The port is there to allow access to ROSE for guys who can't reach it otherwise.
I use NetRom type nodes to forward only if the TexNet high-speed network doesn't go in that direction yet, but NEVER on the ROSE freq.. That's common courtesy.

Keyboard QSO's occur on ALL of these networks, as far as I can tell. I won't sit here and claim that my forwarding activities have never bothered a Keyboard QSO, but I will say that I stay aware of the fact that there's more going on out there besides my BBS, and I make every effort to "get in and out" quickly by using the best, fastest routing I can find, at the hours when the network normally is pretty dead. It's easier on my equipment, and cuts down on QRM.

I figure the TexNet folks know a lot more about the network's capabilities than I do, so naturally I follow thier reccomendations for my forwarding activities. I've never seen reason to regret this.
Over the TexNet network, bundled forwarding techniques have been made possible by the high level of cooperation among BBS SYSOPs and Networkers. This means that instead of forwarding all over the network, I only forward to a HUB station over TexNet, and everything gets distributed from there. This is obviously best for the network, since it cuts down on having the same info being sent over and over again through any given link.. It's also best for me since it greatly simplifies my FWD files and again, saves wear and tear on my equipment. More is done by doing less, and you don't get many deals like that! Obviously, this forwarding method is good news for keyboarders as well.

It probably sounds like I'm tooting my own horn, here.. Maybe so, but I'm also doing it for the BBS SYSOPs and Network guys I've met. The mature, cooperative attitudes I've encountered are infectious, and the best

explanation I can come up with for the fact that Keyboard/BBS wars and
BBS/Network wars are not a big problem here.

All it takes is a little cooperation to see things go reasonably smooth. If
there's an "Us and Them" attitude between BBS SYSOPs, Users, and Networkers
where you live, try to find some way to chunk it and you'll be amazed at how
your "lousy" network begins to perform and grow.

Time spent doing that is probably more effective than time spent in honest
toil, saving money up for more/better equipment. Also, while getting
together with the other hams to make that cooperation possible, a little
extra planning will mean that there's food and cold drinks there, and you
can do the hardest part with everybody holding down chairs, having a little fun.

Not bad, huh?

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

" If god dwells inside us like some people say, I sure hope he likes
enchiladas, because that's what he's getting!"

54. Re: [NETSIG:1443] Re: Internet and LL forwarding

From: Dave Wolf <wo5h>
Date: Mon, 10 Jul 1995 19:15:55 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507110015.TAA28068@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Jack: You hit the nail square on the head with your observation that BBS
operation can be "too much of a good thing." I'm going to borrow this
phrase as it relates to BBS operation for upcoming presentations.

Dave WO5H

55. Re: [NETSIG:1451] Re: BBS Software wishlist

From: n5pvl@texoma.com (Charles Brabham)
Date: Mon, 10 Jul 1995 19:45:38 -0500
To: netsig@tapr.org
Message-ID: <199507110045.TAA11369@ns1.texoma.com>
Rendered body type: text/plain

>>A while back, Hank W0RLI asked for ideas, for future BBS software. I had an
>>idea, but it took awhile to think it through so I've been slow in responding.
>
>Should'nt this message be posted to BBSSIG instead of here ???
>
>

Yes, it should have! Sorry about that!

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

" If god dwells inside us like some people say, I sure hope he likes
enchiladas, because that's what he's getting!"

56. Re: [NETSIG:1447] PK-88

From: shawnpat@sierra.net (Shawn Skinner)
Date: Mon, 10 Jul 1995 03:38:41 -0700
To: netsig@tapr.org
Message-ID: <199507110340.AA25335@diamond.sierra.net>
Rendered body type: text/plain

>Maybe this is not the type info needed or passed here, as I have not seen
>any thing of this nature in some time, but in the interest of RF networks
>and extending or improving them, I have been asked if I could convert a
>PK-88 to run Thenet X1J... I am not a strong technical type but am willing
>to try anything, but first the easy way, has any body done this and what is
>the mod?
>===
>Rex Ishmael, Environmental Engineer, Halliburton Energy Services
>E-Mail:rishmael@halnet.com
>Amatuer Mail: WD0AJG@WD0AJG.#SCOK.OK.USA.NOAM
>Office=(405)251-2298 (hardly ever there, but leave a msg!)
>===

>

The answer is, no, the AEA series, except PK-96 are not modifyable
for X1J (any version).

Long discussion about this only 1.5 month ago.

73 de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner

57. meteor-scatter commo

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 10 Jul 1995 22:25:45 -0700
To: netsig@tapr.org
Message-ID: <199507110533.AAA01121@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Here's a brief overview on meteor-scatter data communications: Every day
tons of space dust impinges upon the earth. This causes a relatively
constant cycle of ionization trails in the upper atmosphere with the max at
6 am and the min at 6 pm. The ionization density is such that signals in
the 40 to 50 MHz range can provide reliable communications over a range of
400 to 2000 km.

A number of systems have been put into operation using this mode. The first
was called JANET (after Janus, the Roman god) during the '50s in Canada
between Port Arthur and Toronto. This was a teletype link using a DSB AM
duplex channel with PPM at 650 bps. Another was COMET (COmmunication by
MEteor Trails) between the Netherlands and France. COMET used a 2000 baud
signaling rate and FSK with 6 KHz deviation. Average transmission delays to
send a 150 character message varied from 1 to 4 minutes. A more modern
system was the AMBCS (Alaska Meteor Burst Communications System) which used
PSK modulation at 2kbps.

For amateur use a starting point would be 2400 baud packet, a 100 watt SSB
rig and a 4 or 5 element 50 MHz beam. Throughput with this configuration
should approximate.an average of 200 WPM for stations within the window
indicated above.

The upside of meteor scatter data is that it's relatively inexpensive, very
reliable and is unaffected by most solar events. The downside is the
comparitively slow average data rate. However, higher power and
full-duplex operation have reportedly resulted in data transfers in excess
of 1kbps.

73 de Jack

58. Re: [NETSIG:1433] Scatter, Tropo

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Tue, 11 Jul 95 08:44:35 UTC
To: netsig@tapr.org
Message-ID: <39@paccomm.com>
Rendered body type: text/plain

Charles mentions Tropo Ducting, while Chuck mentions Tropo.

I believe the more exact name for Tropo is Tropo Scatter, at least that is
what the USAF calls it. Tropo Scatter uses large gain antennas, high
power (many KW) and gets reliable communication over distances of 100-200
miles. Kinda the same effect at meteor scatter, but the reflection is
not off meteors, but dust or hot spots in the atmosphere. Not sure how
the process would scale down to amateur power levels.

_ _
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

59. Re: [NETSIG:1446] Re: Bulletins vs Mail

From: jra@ag9v.ampr.org
Date: Tue, 11 Jul 1995 08:26:09 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507111226.IAA21878@ag9v.ampr.org>
Rendered body type: text/plain

You (Tom Moulton) write:
>

>The networking issue that is really sticking out is that people are not using
>the network.
>
>What were to happen if you had the BBSs specialize to specific topics and
>have the users USE the backbone to access the bbs they want?
>
>There are 20 BBS's I can access within a few network hops and they all have
>mostly the same tired bulletins...

Tom is onto something here. Most urban and suburban areas have multiple BBSs,
all carrying the same traffic. That's sure the case here in Dayton. But
when we suggested setting up a cellular user access structure (low level 2m
1200 baud switches, geographically dispersed across the region, connected to
the BBSs and to each other via the 19.2kB repeater) and have the BBSs
specialize a bit, we got a very frosty cold shoulder.

There's no way to justify having three, four, or more BBSs, each with its
own 2m channel, and each carrying an identical message base, in the same
community. But for whatever reason, that's what we have and what we seem
to be stuck with.

John
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

60. Re: [NETSIG:1429] Re: Censorship ..NOT!

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Mon, 10 Jul 1995 16:07:17 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950710160533.441B-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Mon, 10 Jul 1995, Gary McDuffie wrote:

> I see this is on the wrong sig and should be moved back to bbssig.

Might this depend on whether one believes the store-and-forward BBS system
to be a network? It's rather controversial.

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

61. Re: [NETSIG:1434] Re: Internet and LL forwarding

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Mon, 10 Jul 1995 16:40:22 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950710162745.441C-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Mon, 10 Jul 1995, Hank Oredson wrote:

> On Jul 7, 5:33pm, Howard Goldstein wrote:
>
> > With the move to NETSIG, perhaps the baggage of the old arguing can be
> > left behind on BBSIG, forgotten. I would like to ask two questions to you
> > folks, that is, if all the alternate methods were dumped years ago and we
> > were doing our forwarding between major and mid-sized metropoli on HF, how
> > many stations would be involved and how many connections would each be
> > making to different stations to create a forwarding network?
>
> The original ARRL sponsored planning showed roughly a dozen regional
> HF systems. This may be a bit low, due to the requirement for a
> backup network as well as a primary. With modern HF modulation
> techniques, I think this number is still viable.

This reminds me of the NTS system, also based on twelve regional nets.
Like NTS were these systems supposed to feed higher level area networks
where inter-area transfers would occur?

>
> > The other question is a two parter, can we satisfy those critics of the
> > present system that we do not have a network absent realtime
> > transcontinental connectivity for end users, and if so, how?

>
> Of course not, it is not a valid argument. The only thing folks are
> quibbling about is the response time and specific applications supported.
> Once we were able to support, for example, keyboard chats with, for example,
> less than 5 minute rtt then the prospect of realtime audio would be raised.
>
> It is my observation that the vast majority of hams (well over 90%)
> are not interested in keyboard chats. FM voice repeaters are much
> better at this locally, and HF SSB is much better at it on long haul
> paths. Were there more interest, then the folks interested would be
> pitching in to help build the network they want.
>

One may argue over the semantics, but I think it's a bad idea to simply
dismiss the point as invalid when at best, it seems to me, the complaint
is premature. My vision of the future definitely includes near instaneous
DX networking. It may be for applications as simple as one on one QSOs,
but like you I don't see much use for that. Rather the other possible
uses including roundtables and APRS, dx cluster internetworking,
multiplayer games, and other services not classically QSO but requiring
more than an email system.

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

62. Re: [NETSIG:1457] meteor-scatter commo

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 09:42:34 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507110935.I4760-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Jack, I wonder if there are propagation programs out there for tropo and
MS, my experience is that the signal level drops of course drasticly as
you go over the horizon, then from there on, it is a gradual drop as you
aproach the tropo horizon or cut off point. Signals out to about 160km
are usually quite strong with reasonable gain antennas and only 100-200
watts of power out of the TX. The little bit of research that I have
been able to do would indicate that a 100 watt station should be able
to do 9k6 out to about 200km with no problems, 4k8 should run out to
about 300km or more, and 2k4 baud should be good out much further but
I have not looked at the far end of things too much.

Here I am talking of gain in the antenna on the order of 12-15 db.

Looking back at the project I did in Guatemala on 470mhz, we had 21.5 dBi
in the antennas, and 100 watts output (I think that comes out to about 20kw
EIRP) and as a result THAT signal was quite audible over 350km away, but
that is true brute force signalling, it also shows that those higher freqs
are still quite usable for tropo.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

63. Re: [NETSIG:1459] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 10:01:46 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507110951.K4760-0100000@gateway.utilpart.com>

Rendered body type: text/plain

Yes, indeed Tom is onto something, we have several BBS in the area
who have taken to being accessed over the network rather than being
on a "dedicated freq". Those BBS have a AX.121 address assigned to
that facility, and the users know that they can access that BBS from
any ROSE switch on the network just by connecting to the BBS call @
Ax.121 address.

Sure makes it a lot easier for all involved. This is not to say that
we still do not have a lot of BBS sysops who want to have "their ded-
icated freq" it is a ongoing battle, but I believe that with proper
training some of them will understand.

I also believe that by setting those BBS facilities up with a dedicated
address, some BBS sysops transfer the "dedicated" syndrome from the need
for a dedicated frequency to the need for a dedicated address. It is
easier to hand out addresses than it is frequencies. Since our RF network
is based on X.121 addressing and we have loads of addresses to go around
locally, it becomes much easier to deal with this problem getting the BBs
sysops to go behind the network and transfer the dedication need from a
frequency to a address.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

64. Re: [NETSIG:1461] Re: Internet and LL forwarding

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 10:03:13 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507111053.L4760-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Howie you said it all

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

65. Re: [NETSIG:1459] Re: Bulletins vs Mail

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Tue, 11 Jul 1995 09:08:35 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HSQL985OQ08Y5VW8@tntech.edu>
Rendered body type: text/plain

[snip]
> >What were to happen if you had the BBSs specialize to specific topics and

> >have the users USE the backbone to access the bbs they want?
[snip]
> There's no way to justify having three, four, or more BBSs, each with its
> own 2m channel, and each carrying an identical message base, in the same
[snip]

What is the critical resource here, BBSs or network capacity?

Currently the local BBSs serve as a fairly effective message caching system
and the messages need only travel over the network one time. If you
eliminate that functionality the already overloaded network will have even
more traffic to carry.

(I'm referring to the inter-city links here. Except in large cities, there
is no real justification for multiple BBSs and BBS frequencies.)

Jeff, k9ja
+-+
Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
(615) 372-3485 | Cookeville Tennessee 38505   U.S.A.

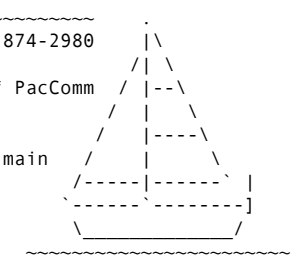
66. Troposheric Scattering

From: paul@paccomm.com
Date: Tue, 11 Jul 95 09:59:46 UTC
To: netsig@tapr.org
Message-ID: <100@paccomm.com>
Rendered body type: text/plain

Interesting discussion.
Technically speaking, tropospheric scattering should be there all
the time. Tropospheric ducting occurs under abnormal conditions
such as temperature inversions (although in certain places, such
as Los Angeles and Denver this might approach the norm at
certain times of the year!).
Typically, ducting is very transient geographically. My best recollection
of it was driving down the main street of Hamilton, Bermuda and
being able to contact a single repeater in Detroit!!!
That was at 800 miles range. It was one repeater only and it wasn't
heard by somebody at the other end of the island barely 10 miles
away. They thought I was making this contact up with a W8 !!!!!!!
Some of the best work in this area is in papers by Eimac staff
who have make high power PAs for tropospheric and meteor scatter
systems. The best arena has proven to be data links to oil platforms
in the North Sea. They have opted for MS systems over all others
at the 100 mile range.
PAs in the 100's of watts are quite adequate for tropo. For MS, it's
more likely that you'll need 2kW+ because you cannot use a high
gain antenna - it'll be too selective to a particular area of
the sky and reduce the number of "hits" on ionised trails. Of
course, it's the ionisation from the debris that does the trick
for you, not the rock/snowball that's flying in.......

~~~~~~
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980
Fax:+1 (813) 872-8696
Views expressed here are not necessarily those of PacComm
Don't surf the net, SAIL it!
Captain of S/V "Spindrift", Dunedin, FL.
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems
4413 N. Hesperides St., Tampa, FL 33614-7618



67. Re: [NETSIG:1465] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 11 Jul 95 13:16:22 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c21@ram.net>
Rendered body type: text/plain

>[snip]
>> >What were to happen if you had the BBSs specialize to specific topics and
>
>> >have the users USE the backbone to access the bbs they want?
>[snip]
>> There's no way to justify having three, four, or more BBSs, each with its
>> own 2m channel, and each carrying an identical message base, in the same
~~~~~~

>[snip]
>
>What is the critical resource here, BBSs or network capacity?

That is a very complex question. If you have messages that are read by only a
few people then it may not pay to forward them to a dozen or more BBSs.

Look at your # of time read stats. Try this, list 100 messages and then total
the number of times read. I bet the average is LESS THAN 1.

The question is does it pay to forward the message to many BBSs in a given
network if it might only be read once from each location?

If you broke down the bulletins down by topic and had each BBS carry a
unique set of topics you would have less forwarding and might have a few
messages read more than once... :}

>
>Currently the local BBSs serve as a fairly effective message caching system
>and the messages need only travel over the network one time. If you
>eliminate that functionality the already overloaded network will have even
>more traffic to carry.

For topics that are read a lot it would make sense to have the messages
stored on many machines...

>(I'm referring to the inter-city links here. Except in large cities, there
>is no real justification for multiple BBSs and BBS frequencies.)
>
I personally do not like having a BBS on a network access channel since a BBS
is typically a hidden transmitter and a Network Switch isn't.

If you put the BBS in the backbone it then becomes a peer to the network
switch or a network facility, instead of just another user.

>Jeff, k9ja
>+-+

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

68. Re: [NETSIG:1465] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 11 Jul 95 10:55:50 PDT
To: netsig@tapr.org, bbssig@tapr.org
Message-ID: <9507111055.ZM8400@hanko>
Rendered body type: text/plain

(Crosspost to both groups is intentional)

On Jul 11, 9:25am, Jeffrey Austen wrote:

> (I'm referring to the inter-city links here. Except in large cities, there
> is no real justification for multiple BBSs and BBS frequencies.)

I think we need to be a bit careful in our thinking ... this is a hobby
we are talking about, and the only "justification" someone needs is
that they think it would be (useful, fun, interesting, a service to
others, educational, etc.). i.e. if someone wants to run a bbs, they
will run a bbs.

We handle that in a fairly simple manner in the Portland metro network:
we just say "Welcome to the network.", feed the new system all the bulletins
(over the 9600 baud metro backbone), and invite the sysop to next
months coordinating meeting.   Then we all discuss how to best make
use of the new network resource. Those systems that end up being
"not useful to the general user community" tend to wither away pretty
quickly due to lack of user support. Yes, this means that BBS systems
"pop up" and "go away" from time to time, but with over a dozen of them
on air (metro area about 1 mil population) there are always plenty
available.

The key statement above was "... over the 9600 baud metro backbone".
It's the same backbone that user traffic uses to get to the bbs systems ...
Of course users access the 9600 baud network directly as do the bbs
systems. There are quite a large number of 1200 baud ports as well,
but EVERY 1200 baud port is on a switch which connects it to the 9600

baud backbone. Our next project is to add a 56k or 64k backbone to
the metro network. Once that is in place, the 9600 baud links will
be also tied at 56k, and the high-data-rate services will use direct
56k links. As a few users are starting to point out "9600 is SOOOO
SLOOOOW, we need to fix the network."

As I've tried to point out before, there is exactly ONE key thing
we did that made this all happen. That key thing is the attitude of
the network and network services builders: "You want to try it, try
it. You want to put it on air, put it on air. You want that new
service, get it running. We support everything and anything you want
to do, any time, for any reason. More is always better than less."

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

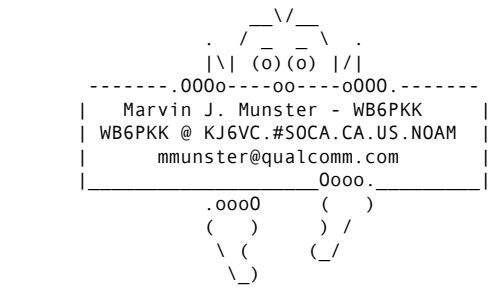
69. 2M/440 Off the shelf Radio for 9k6?

From: mmunster@qualcomm.com (Marvin Munster x5388)
Date: Tue, 11 Jul 1995 11:01:47 -0700
To: netsig@tapr.org
Message-ID: <v02110181ac286970e798@[129.46.12.181]>
Rendered body type: text/plain

I would like some input on an off the shelf radio that works BEST without
conversion for 9k6 bps. I would like either individual or dual band radios
for 2M and 440.

I know that there has been lots of discussion on this subject, and it, as
most things, remains very subjective. No matter what you bought, you are
going to defend it to the death, even if it wrong, because you made the
decision, and you will never admit to making a mistake. Any way, my point
is that all of the discussion that I have read has not been very clear. I
am looking for information like..."I tried this and did everything
correctly and the damn thing still won't work properly with out tweaking."

All information welcome.



70. Re: [NETSIG:1468] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 14:44:48 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507111414.C7809-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Our only problem is with those who want their "dedicated" frequency.
There was a time when a BBS popped up and he could get a "dedicated"
channel. That time is long past, but everyone wants that same cond-
tion, but the system can no longer support dedicated channels, there
are no longer dedicated channels to go around.

We welcome anyone who wants to try, but they have to live with the condx,
dedicated backbone feed, and common user freq.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

71. Re: [NETSIG:1469] 2M/440 Off the shelf Radio for 9k6?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 11 Jul 95 12:03:59 PDT
To: netsig@tapr.org
Message-ID: <9507111203.ZM8502@hanko>
Rendered body type: text/plain

On Jul 11, 1:12pm, Marvin Munster x5388 wrote:
> Subject: [NETSIG:1469] 2M/440 Off the shelf Radio for 9k6?
> I would like some input on an off the shelf radio that works BEST without
> conversion for 9k6 bps. I would like either individual or dual band radios
> for 2M and 440.

I have some Kantronics D4-10, and some TEKK KS-900 radios running
at 9600 baud. For both radios, I just wired up the various cables,
plugged everything together, and they worked. Have had D4-10's on
air for several years now, and TEKKs for over a year. Using Data
Engines, KPC-9612s, and MFJ-1270B + 9600 mod.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

72. KPC-9612 and Linux

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Tue, 11 Jul 95 14:27:35 PDT
To: tcp-group@ucsd.edu, netsig@tapr.org
Message-ID: <9507112127.AA13330@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

I am helping a friend with his Kantronics KPC-9612 TNC. I have it up and
running on both 1200 bps AFSK and 9600 bps FSK in terminal mode. Now I want
it to work under Linux's native AX.25 in the kernel.

As I suspected the Linux AX.25 code will only communicate with port one for
transmit and receives both ports. I understand why. Kantronics uses the
upper nibble of the KISS protocol to address the individual ports.

So my question is, before I go in and modify the source code, has any
already worked on this? My guess is that putting this feature in the kernel
code would be benificial as it will also work for the Kantronics Data Engine.

Thanks,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943
 - - - - -
K6LY NPSARC - http://www.sp.nps.navy.mil/npsarc/k6ly.html
Web Ground Station - http://gndstn.sp.nps.navy.mil
Amateur Spread Spectrum - http://www.sp.nps.navy.mil/ss

73. Re: [NETSIG:1463] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 11 Jul 1995 16:47:52 -0500

To: netsig@tapr.org
Message-ID: <199507112147.QAA27930@ns1.texoma.com>
Rendered body type: text/plain

>Yes, indeed Tom is onto something, we have several BBS in the area
>who have taken to being accessed over the network rather than being
>on a "dedicated freq". Those BBS have a AX.121 address assigned to
>that facility, and the users know that they can access that BBS from
>any ROSE switch on the network just by connecting to the BBS call @
>Ax.121 address.
>
>Sure makes it a lot easier for all involved. This is not to say that
>we still do not have a lot of BBS sysops who want to have "their ded-
>icated freq" it is a ongoing battle, but I believe that with proper
>training some of them will understand.
>
>I also believe that by setting those BBS facilities up with a dedicated
>address, some BBS sysops transfer the "dedicated" syndrome from the need
>for a dedicated frequency to the need for a dedicated address. It is
>easier to hand out addresses than it is frequencies. Since our RF network
>is based on X.121 addressing and we have loads of addresses to go around
>locally, it becomes much easier to deal with this problem getting the BBs
>sysops to go behind the network and transfer the dedication need from a
>frequency to a address.
>
>--
>   Chuck Hast   e-mail wchast@gateway.utilpart.com

In other words, Chuck, there are several AX25 BBS stations in your area, and
the SYSOPs of these systems are not interested in the TCP/IP "vision" of
packet radio, but would rather continue using the worldwide digital RF net
they already have in place..

Is that a fair translation of your message?

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

If you lived in the dark ages, and you were a catapult operator, I bet the
most common question people would ask is, "Can't you make it shoot farther?"

No, I'm sorry. That's as far as it shoots.

74. Re: [NETSIG:1467] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 11 Jul 1995 17:15:43 -0500
To: netsig@tapr.org
Message-ID: <199507112215.RAA28624@ns1.texoma.com>
Rendered body type: text/plain

>>[snip]
>I personally do not like having a BBS on a network access channel since a BBS
>is typically a hidden transmitter and a Network Switch isn't.
>

It's good to see an intellegent, cooperative attitude between NodeOps and
BBS SYSOPs.. I sure am glad I don't live in YOUR area, pardner!

Let me guess... Does your local packet operations run pretty smooth, or are
there constant squabbles, with the retardation of growth that goes with that?

More importantly, are ALL of the packets ops in your area having fun?

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

If you lived in the dark ages, and you were a catapult operator, I bet the
most common question people would ask is, "Can't you make it shoot farther?"

No, I'm sorry. That's as far as it shoots.

75. Re: [NETSIG:1474] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 19:38:27 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507111954.F7809-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Tue, 11 Jul 1995, Charles Brabham wrote:

> >>[snip]
> >I personally do not like having a BBS on a network access channel since a BBS
> >is typically a hidden transmitter and a Network Switch isn't.
> >
>
> It's good to see an intellegent, cooperative attitude between NodeOps and
> BBS SYSOPs.. I sure am glad I don't live in YOUR area, pardner!

YOU sir shoot before you look, what he is saying is that by putting BBS on
a user channel, they are usually hidden to the greater part of the users,
by putting them on the system as a peer or network facility they become
accessable via the network port device which usually has good view to most
all users on the channel the network services access point is servicing.
You should have read the rest of the message before you fired that one off.

>
> Let me guess... Does your local packet operations run pretty smooth, or are
> there constant squabbles, with the retardation of growth that goes with that?

We too are following a similar idea, trying to get the BBS to go BEHIND the
network and then any switch port on the network becomes a port to that
BBs. Why should there be retardation of growth, by putting the BBS
behind the network, MORE users can ACCESS the things from greater distances,
so a BBS with a given "flavor" can have much greater coverage, each NSAP
being one more service freq for that BBS. Also as I pointed out by giving a
BBS sysop a ADDRESS rather than a FREQ he still has something dedicated, it
is just not quite so finite as the amount of freqs available. Achieves the
same thing though. BBS sysop gets a place to run his/her BBS, and at the
same time avoids the problems a fighting that happen when you stack 4 bbs to
a freq.

>
> More importantly, are ALL of the packets ops in your area having fun?
AHH, but I bet in YOUR area every BBS sysop has his OWN dedicated freq...
but then out there I guess you can get away with that up around lake Texoma,
there ain't much population there.... Here and up where Tom lives we
don't have that nicety anymore, there are MANY more BBS than there are
freqs to go around so we either stack them 4 deep on a channel or figure
out how to get them on the network so the can be accessed from any NSAP

>
>
> 73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>   Internet : n5pvl@texoma.com
Sorry, but you JUDGE other areas by YOUR standards, YOUR standards would
probably cause a wielding of dangerous weapons in some areas. Ask BEFORE
you find fault.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

76. Re: [NETSIG:1474] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 11 Jul 95 17:10:28 PDT
To: netsig@tapr.org
Message-ID: <9507111710.ZM8914@hanko>
Rendered body type: text/plain

On Jul 11, 5:36pm, Charles Brabham wrote:
> Subject: [NETSIG:1474] Re: Bulletins vs Mail
> >>[snip]

> >I personally do not like having a BBS on a network access channel since a
BBS
> >is typically a hidden transmitter and a Network Switch isn't.
> >
>
> It's good to see an intellegent, cooperative attitude between NodeOps and
> BBS SYSOPs.. I sure am glad I don't live in YOUR area, pardner!

Me too!

But one question: in our area every BBS *is* a network switch,
or rather "The connection between the BBS application and the
packet routing application takes place in shared memory in a
single computer."

The question: How do applications connect to the network in your
part of the world? Does not the network extend directly into the
same computer the application uses?

The other question: why do you design your network so that certain
applications (a BBS) are typically hidden transmitters to other
applications (a network switch)?

Or am I all confused? Help me understand what you meant.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

77. Re: [NETSIG:1476] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 21:02:37 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507112004.B10751-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Tue, 11 Jul 1995, Hank Oredson wrote:
> Me too!
Sorry but you too did not read his msg properly, we do basicly the
same thing the BBS are facilities ON the network those that participate
(we don't force it on them) set up a network feed with a switch dedicated
to that BBS, givng that BBS a dedicated AX.121 address.
>
> But one question: in our area every BBS *is* a network switch,
> or rather "The connection between the BBS application and the
> packet routing application takes place in shared memory in a
> single computer."
Ours are much the same, the BBS are usually co-located with a switch
stack and have a dedicated address,
>
> The question: How do applications connect to the network in your
> part of the world? Does not the network extend directly into the
> same computer the application uses?
Yes the network extends directly to that facility if the BBS sysops
desires it.
>
> The other question: why do you design your network so that certain
> applications (a BBS) are typically hidden transmitters to other
> applications (a network switch)?
NO WE DO NOT this is exactly what we try to avoid by making the NSAP's
also the port to any BBS on the network. The BBs who set up a port on
a freq without proper antenna hight are the ones who fall into this trap.
>
> Or am I all confused? Help me understand what you meant.
Yes you have to be, we do not foster hidden terminals, by making the BBS
a facility on the network the become accessable via the same point as other
parts of the network,

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

78. Re: [NETSIG:1475] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 11 Jul 1995 20:15:21 -0500
To: netsig@tapr.org
Message-ID: <199507120115.UAA02362@ns1.texoma.com>
Rendered body type: text/plain

According to Chuck Hast....

>> >>[snip]
>> >I personally do not like having a BBS on a network access channel since
a BBS
>> >is typically a hidden transmitter and a Network Switch isn't.
>> >
>>
>> It's good to see an intellegent, cooperative attitude between NodeOps and
>> BBS SYSOPs.. I sure am glad I don't live in YOUR area, pardner!
>
>YOU sir shoot before you look, what he is saying is that by putting BBS on
>a user channel, they are usually hidden to the greater part of the users,
>by putting them on the system as a peer or network facility they become
>accessable via the network port device which usually has good view to most
>all users on the channel the network services access point is servicing.
>You should have read the rest of the message before you fired that one off.
>

All I get out of that is that you sure would be tying up your network a lot,
if guys are accessing the same BBS from all directions, and at great
distances. Sometimes it's best to look around and see what the other hams
are doing..

My BBS has access to a high-speed network (TexNet), and I've been asked by
the network folks to DISCOURAGE network access by users to my BBS, to
prevent what's called "BBS DX'ing".. So on my TexNet port, users can
connect from anyplace on the network, but they can't list or read bulletins.
On THAT PORT, the sofware presents itself as a PMS.- Personal messages only.
They are encouraged to look to thier local HomeBBS for bulletin service,
which gives the network a break.
I have User ports with full acess, mail beacons ect on other freqs which are
used for local stuff, which is a lot better than tying up our best links.
If you try to do EVERYTHING on the network, you'll just end up with a slow
network.
All of that bulletin listing and reading is done "off to the side" of the
high-speed network with the setup packet ops have been using, which looks a
lot more sensible to me.
>
>> Let me guess... Does your local packet operations run pretty smooth, or are
>> there constant squabbles, with the retardation of growth that goes with that?
>
I still say the phrase "I personally do not like having a BBS on a network
access channel since a BBS is typically a hidden transmitter and a Network
Switch isn't." sounds arrogant and doesn't display a cooperative attitude.

>We too are following a similar idea, trying to get the BBS to go BEHIND the
>network and then any switch port on the network becomes a port to that
>BBs. Why should there be retardation of growth, by putting the BBS
>behind the network, MORE users can ACCESS the things from greater distances,
>so a BBS with a given "flavor" can have much greater coverage, each NSAP
>being one more service freq for that BBS. Also as I pointed out by giving a
>BBS sysop a ADDRESS rather than a FREQ he still has something dedicated, it
>is just not quite so finite as the amount of freqs available. Achieves the
>same thing though. BBS sysop gets a place to run his/her BBS, and at the
>same time avoids the problems a fighting that happen when you stack 4 bbs to
>a freq.
>

Here's where I believe your reasoning breaks down. To understand WHY, you
need to understand why the store-n-forward setup is being used in the first
place.

When you make long-distance connects over a packet radio network, the more
nodes you traverse the slower things get, and the less reliable the link
becomes. Reliability becomes a serious consideration after moving through
only a few nodes. If you're covering a large area, you'll be traversing a
lot of nodes with your data.

Short hops are generally quicker and ALWAYS more reliable over a given
network, and give you more flexibility in dealing with changing conditions..
If node A goes down halfway across the state from you, the SYSOP at that BBS
can easily re-route stuff thru node B, or even another network. You might
never know about it, since the stuff gets thru anyway. Store and forward
gives you a lot of flexibility in handling problems, but needs it less
because it's tougher to start with.. It doesn't all have to work at one
time, due to all the redundant paths BBS SYSOPs commonly set up for themselves.

Your "system" depends too much on everything working all the time, with no
wear and tear. It's not tough enuff to hold up to the conditions we normally
face, and so is unlikely to see widespread use. It SURE won't work very well
when applied to larger areas such as a state, and isn't the best idea for
local stuff I've heard of either.

By the way, the TexNet network has a network PMS, which (when all goes well
) can be reached from anywhere in the network, as you are speaking of. There
are a few guys who usually use the network PMS, and a whole three states
worth of packet ops who find it much easier, faster, and more rewarding to
access a local BBS instead of tying up TexNet.. It's been tried here, and
didn't end up replacing BBS's or even putting a dent in thier usage.
It probably won't there, either, especially if you have to convince
everybody to use TCP/IP software and networking in order for it to come about.
Most hams prefer AX25.. It's simpler, works better, and is MUCH more
reliable. For these reasons, it also does more. If you enjoy TCP/IP, there
certainly nothing wrong with that. If you're planning on trying to shove it
down ham's throats, look out for the back-blast. Or (more likely) stand by
to be ignored by most hams.
>>
>> More importantly, are ALL of the packets ops in your area having fun?
>AHH, but I bet in YOUR area every BBS sysop has his OWN dedicated freq...
>but then out there I guess you can get away with that up around lake Texoma,
>there ain't much population there.... Here and up where Tom lives we
>don't have that nicety anymore, there are MANY more BBS than there are
>freqs to go around so we either stack them 4 deep on a channel or figure
>out how to get them on the network so the can be accessed from any NSAP
>
Dedicated frequency? No..
High level of cooperation among packet ops, BBS SYSOPs and NodeOps? Yes!

You forget I live close to the D/FW metroplex, Chuck... Why, I've been to
the big city SEVERAL times! They don't seem to be experiencing all your
alleged "problems" either, and they've got a nice big mess of hams down
there, along with several BBS's.

I still suspect the difference lies in interpersonal relations. Start
treating the BBS SYSOPs like hams and they'll be glad to work WITH you.

>Sorry, but you JUDGE other areas by YOUR standards, YOUR standards would
>probably cause a wielding of dangerous weapons in some areas. Ask BEFORE
>you find fault.

No, I've been around the block a few times. I know arrogance when I see it.
Why, I get to see it ALL THE TIME! (Mirror)

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

If you lived in the dark ages, and you were a catapult operator, I bet the
most common question people would ask is, "Can't you make it shoot farther?"

No, I'm sorry. That's as far as it shoots.

79. Re: [NETSIG:1476] Re: Bulletins vs Mail

From: Andrew Funk <kb7uv@panix.com>
Date: Mon, 10 Jul 1995 19:13:03 -0400

To: netsig@tapr.org
Message-ID: <199507120210.WAA12653@panix3.panix.com>
Rendered body type: text/plain

At 07:21 PM 7/11/95 -0500, hank_oredson@mentorg.com wrote:

>The question: How do applications connect to the network in your
>part of the world? Does not the network extend directly into the
>same computer the application uses?

>The other question: why do you design your network so that certain
>applications (a BBS) are typically hidden transmitters to other
>applications (a network switch)?
>
>Or am I all confused? Help me understand what you meant.

User access to the network is either via ROSE Switches or TheNet (or
equivalent) Nodes. Both "flavors" of non-IP (that's here, too) networking
co-exist.

Connections between Switches and Nodes are, for the most part, protected
point-to-point backbone links without hidden transmitters.

Until fairly recently, all BBSs in the area ran user access ports on the
same frequencies as the user access Switches and Nodes. This is where the
hidden transmitter problem comes in. The BBSs were wherever the sysop put
them. Some had extremely high antennas, some low.

We're moving towards having all BBSs remove their user port radios, and
replace them with dedicated point-to-port links to the network backbone(s).
Users then access to the BBSs through their local network access Switch or Node.

In some cases the user access Node may well be sharing the same computer as
one or more applications, but that isn't the issue.

This actually results in better performance for the users! Most traffic on a
given frequency is via the network access Switch or Node. No longer are two,
three, or more BBSs directly servicing users within "earshot" of the Switch
or Node, creating collisions and hidden transmitters. And with everyone
going through a single access point, cooperative users have a bit of
protection from users with aggressive tnc parameters.

We also try to limit BBS forwarding during "prime time" to personal
messages, and forward bulletins when there are fewer "wetware" users of the
network. This leads to increased network performance for users at the small
cost of slightly delayed bulletin forwarding.

[Note: when I say "we" I'm referring to those in the NY/NJ/CT area who share
these views. There are others who don't. Competition lives!]

73, Andy
--

  _____________________ Andrew Funk, KB7UV _____________________
 | Tech Producer/Editor   Internet: kb7uv@panix.com |
 | WCBS-TV Channel 2 News   http://www.webcom.com/~arfunk/ |
 | New York, NY USA   --- INSERT COMMERCIAL HERE --- |

80. Re: [NETSIG:1478] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 11 Jul 1995 22:44:52 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507112143.K10751-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Tue, 11 Jul 1995, Charles Brabham wrote:

>
> According to Chuck Hast....
> distances. Sometimes it's best to look around and see what the other hams
> are doing..
>
> My BBS has access to a high-speed network (TexNet), and I've been asked by
> the network folks to DISCOURAGE network access by users to my BBS, to
We do not encourage BBS dx-ing, we just try to resolve the problem of
multiple BBS scattered all over a single freq contending for the channel.

> prevent what's called "BBS DX'ing".. So on my TexNet port, users can
> connect from anyplace on the network, but they can't list or read bulletins.
> On THAT PORT, the sofware presents itself as a PMS.- Personal messages only.

> They are encouraged to look to thier local HomeBBS for bulletin service,
> which gives the network a break.
We too do the same thing, but a user accesses a BBS via the switch, many
times the two devices maybe co-located at the same site. The BBS has one
or more high speed links into the system
> I have User ports with full acess, mail beacons ect on other freqs which are
> used for local stuff, which is a lot better than tying up our best links.
> If you try to do EVERYTHING on the network, you'll just end up with a slow
> network.
We have a similar situation south of us where the BBS sysops have build two
separate networks one for BBS and one for users, the poor users have been
relegated to second class and have almost nil connectivity out of their
area, ahh but the BBS sysops they do have the good connectivity.
We have tried to build a network that is all things to all people passing
all types of data. why wast money building parallel networks when you can
build one big one
> All of that bulletin listing and reading is done "off to the side" of the
> high-speed network with the setup packet ops have been using, which looks a
> lot more sensible to me.
The BBS is only at most two hops from a given port so there is not that
much impact on the network,
What may be sensible to YOU may be a quagmire to others.
> >
> >> Let me guess... Does your local packet operations run pretty smooth, or are
> >> there constant squabbles, with the retardation of growth that goes with that?
> >
> I still say the phrase "I personally do not like having a BBS on a network
> access channel since a BBS is typically a hidden transmitter and a Network
> Switch isn't." sounds arrogant and doesn't display a cooperative attitude.
>
> >We too are following a similar idea, trying to get the BBS to go BEHIND the
> >network and then any switch port on the network becomes a port to that
> >BBs. Why should there be retardation of growth, by putting the BBS
> >behind the network, MORE users can ACCESS the things from greater distances,
> >so a BBS with a given "flavor" can have much greater coverage, each NSAP
> >being one more service freq for that BBS. Also as I pointed out by giving a
> >BBS sysop a ADDRESS rather than a FREQ he still has something dedicated, it
> >is just not quite so finite as the amount of freqs available. Achieves the
> >same thing though. BBS sysop gets a place to run his/her BBS, and at the
> >same time avoids the problems a fighting that happen when you stack 4 bbs to
> >a freq.
> >
>
> Here's where I believe your reasoning breaks down. To understand WHY, you
> need to understand why the store-n-forward setup is being used in the first
> place.
>
> When you make long-distance connects over a packet radio network, the more
> nodes you traverse the slower things get, and the less reliable the link
> becomes. Reliability becomes a serious consideration after moving through
> only a few nodes. If you're covering a large area, you'll be traversing a
> lot of nodes with your data.
I did not say we were going long distances, we are just going across town
across the bay, local hops, it is easier to make room on high speed links
than it is to jam them on the few users freqs that are available.
>
> Short hops are generally quicker and ALWAYS more reliable over a given
> network, and give you more flexibility in dealing with changing conditions..
> If node A goes down halfway across the state from you, the SYSOP at that BBS
> can easily re-route stuff thru node B, or even another network. You might
> never know about it, since the stuff gets thru anyway. Store and forward
> gives you a lot of flexibility in handling problems, but needs it less
> because it's tougher to start with.. It doesn't all have to work at one
> time, due to all the redundant paths BBS SYSOPs commonly set up for themselves.
>
> Your "system" depends too much on everything working all the time, with no
> wear and tear. It's not tough enuff to hold up to the conditions we normally
> face, and so is unlikely to see widespread use. It SURE won't work very well
> when applied to larger areas such as a state, and isn't the best idea for
> local stuff I've heard of either.
Yep it does depend on a lot of stuff working properly, just like yours does,
and it also means we have had to set down and plan it out a bit, but it does
work, and it has a LOT of room to grow. Again we do not encourage BBS-DXing,
but we do encourage BBS to be a part of the network and not a problem.
>
> By the way, the TexNet network has a network PMS, which (when all goes well
>) can be reached from anywhere in the network, as you are speaking of. There
> are a few guys who usually use the network PMS, and a whole three states
> worth of packet ops who find it much easier, faster, and more rewarding to

> access a local BBS instead of tying up TexNet.. It's been tried here, and
> didn't end up replacing BBS's or even putting a dent in thier usage.
> It probably won't there, either, especially if you have to convince
> everybody to use TCP/IP software and networking in order for it to come about.
Did I say anything about convcincing ANYONE to use TCP/IP that is only
ONE of the systems in use around here, we also have FBB MSYS and AA4RE
all of which seem to work just fine. also I am sorry that your example of
a network can not handle the traffic load of several users accessing their
favorite BBS over the network.
> Most hams prefer AX25..
I never said I did NOT prefer AX.25 and I see no reason to continue this
because you are not reading the whole thing. All MY connections are Ax.25
So I guess according to you I have been exersizing a sort of "self abuse"
by degrading AX.25 (I still can not see where I have degraded AX.25)
> It's simpler, works better, and is MUCH more
> reliable. For these reasons, it also does more. If you enjoy TCP/IP, there
> certainly nothing wrong with that. If you're planning on trying to shove it
> down ham's throats, look out for the back-blast. Or (more likely) stand by
> to be ignored by most hams.
Well, I am ignored all the time anyhow, so it is no bother to me. But seems
like the way that we have found makes things work more easily here should not
be taken so critically by you. The netsig is for discussing these things not
taking others observations and making cynical targets of them. If you
like your system where you have multiple BBS per channel, that is just fine,
it was not working for us, so we have strived to find a fix for it.

> >> More importantly, are ALL of the packets ops in your area having fun?
By the way to answer your question here, I certainly believe so especially
since many of the them have gotten involved in not only the BBS side of
things but also the network side, more fun for their time.

> >AHH, but I bet in YOUR area every BBS sysop has his OWN dedicated freq...
> >but then out there I guess you can get away with that up around lake Texoma,
> >there ain't much population there.... Here and up where Tom lives we
> >don't have that nicety anymore, there are MANY more BBS than there are
> >freqs to go around so we either stack them 4 deep on a channel or figure
> >out how to get them on the network so the can be accessed from any NSAP
> >
> Dedicated frequency? No..
> High level of cooperation among packet ops, BBS SYSOPs and NodeOps? Yes!
>
> You forget I live close to the D/FW metroplex, Chuck... Why, I've been to
Chee charlie I was born in OKC and was just recently in the DFW area working
on some stuff for the Irving PD, so I know your area pretty well.
> the big city SEVERAL times! They don't seem to be experiencing all your
> alleged "problems" either, and they've got a nice big mess of hams down
> there, along with several BBS's.

>
> I still suspect the difference lies in interpersonal relations. Start
> treating the BBS SYSOPs like hams and they'll be glad to work WITH you.
I never said we DID NOT treat our sysops as hams, our president is a BBs
sysop of all things, boy you DO read a lot more than I print....

>
> >Sorry, but you JUDGE other areas by YOUR standards, YOUR standards would
> >probably cause a wielding of dangerous weapons in some areas. Ask BEFORE
> >you find fault.
>
> No, I've been around the block a few times. I know arrogance when I see it.
> Why, I get to see it ALL THE TIME! (Mirror)
Yep you are arrogant and must have broken the mirror.

Now why don't you crawl back to BBSSIG where you came from and let us
get back to neworking...

Now I am going to turn this thing off and set back and watch Rush Limbaugh
---
   Chuck Hast   e-mail wchast@gateway.utilpart.com

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```
------------------------------------------------------------------------------
Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
------------------------------------------------------------------------------
```

81. Re: [NETSIG:1462] Re: meteor-scatter commo

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Tue, 11 Jul 1995 19:47:01 -0700
To: netsig@tapr.org
Message-ID: <199507120255.VAA16234@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

```
>Jack, I wonder if there are propagation programs out there for tropo and
>MS, my experience is that the signal level drops of course drasticly as
>you go over the horizon, then from there on, it is a gradual drop as you
>aproach the tropo horizon or cut off point. Signals out to about 160km
>are usually quite strong with reasonable gain antennas and only 100-200
>watts of power out of the TX. The little bit of research that I have
>been able to do would indicate that a 100 watt station should be able
>to do 9k6 out to about 200km with no problems, 4k8 should run out to
>about 300km or more, and 2k4 baud should be good out much further but
>I have not looked at the far end of things too much.
>
>Here I am talking of gain in the antenna on the order of 12-15 db.
>
>Looking back at the project I did in Guatemala on 470mhz, we had 21.5 dBi
>in the antennas, and 100 watts output (I think that comes out to about 20kw
>EIRP) and as a result THAT signal was quite audible over 350km away, but
>that is true brute force signalling, it also shows that those higher freqs
>are still quite usable for tropo.
>
>------------------------------------------------------------------------------
>   Chuck Hast                e-mail wchast@gateway.utilpart.com
>
>HAST CONSULTING Tampa FL.:
>Using radio for what it does best, Data Communications.
>
>Grupo Datapac Ltda:sta Rica :
>Aplicando la radio al mundo de la comunicacion digital, extendiendo el
>mundo de la computacion a todo el planeta.
>
>
>Running OS/2 WARP and LINUX on these boxes.
>
>------------------------------------------------------------------------------
>Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
>Ampr.org kp4djt.ampr.org
>AX.121 3100813077
>------------------------------------------------------------------------------


I've had some experience with commercial wide-band tropo systems operating
in the 1700 MHz range, but until you mentioned it, hadn't considered what
could be done with narrow-band amateur circuits.  Looking at my references,
there's been numerous propagation and prediction studies performed on
systems operating from 40 to over 10,000 MHz.. My observation with  several
tropo links indicate very close agreement between predicted and the actual
measured receive signal levels, usually within 2-3 dB.  Though I haven't
seen any, it shouldn't be difficult to design a computerized tropo-scatter
path program.  It sure would save a lot of effort in manually crunching numbers!

There *may* be a meteor-scatter path prediction program available, possibly
in one of the directorys on ftp.funet.fi.  Seems like I saw one for
meteor-shower scheduling and operation and there may be a path program there
as well.

For distances beyond 250 miles and up to 1200 miles for BBS forwarding, I
like the concept of using meteor-scatter.  This would be a dedicated
point-to-point operation between two stations with carefully oriented
antennas.  Assuming an average over a 24 hour period of 200 WPM, that's
roughly 250,000 words per day, day in and day out.  If the packet protocol
included FEC,  there's a possiblity of further throughput improvement.

73 de Jack
```

82. Re: [NETSIG:1480] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 12 Jul 1995 02:34:39 -0500
To: netsig@tapr.org
Message-ID: <199507120734.CAA25190@ns1.texoma.com>
Rendered body type: text/plain

>
>> According to Chuck Hast....
>
>We do not encourage BBS dx-ing, we just try to resolve the problem of
>multiple BBS scattered all over a single freq contending for the channel.

Well, why didn't you Say so in the first place, without all that doubletalk?

Is this the freq they do local FWDs with, or a user freq that's popular? Are
there clear packet channels available which could serve as alternatives? If
not, why not?

>
>> prevent what's called "BBS DX'ing".. So on my TexNet port, users can
>> connect from anyplace on the network, but they can't list or read bulletins.
>> On THAT PORT, the sofware presents itself as a PMS.- Personal messages only.
>> They are encouraged to look to thier local HomeBBS for bulletin service,
>> which gives the network a break.
>We too do the same thing, but a user accesses a BBS via the switch, many
>times the two devices maybe co-located at the same site. The BBS has one
>or more high speed links into the system

Careful about high-speed access to the network by the BBS.. It oughta be
slower than the backbone, at least. Leaves room for the other guys there.

>We have a similar situation south of us where the BBS sysops have build two
>separate networks one for BBS and one for users, the poor users have been
>relegated to second class and have almost nil connectivity out of their
>area, ahh but the BBS sysops they do have the good connectivity.

Those mean old BBS SYSOPs! Are you SURE you don't have a problem getting
along with them?

Let me guess.. The BBS's originally were on the "poor" network, along with
everyone else. Naturally, everyone complained about BBS FWDS, so the second,
better network was built BY THE BBS SYSOPS, freeing up the old one just like
everyone wanted.
Am I warm?
You're saying that the BBS SYSOPs built BOTH networks, and yet the locals
are feeling "slighted"?
A good rule of thumb: If the other feller built and paid for the network
you're using, don't be a noid and complain about the service. If it bothers
you that much, cough up some bucks or break a little of your OWN sweat. In
other words, contribute to the network if it doesn't do what you want. Then
YOU will get to be one of those guys everybody whines at, and you will
rapidly learn to appreciate the attitude I'm describing.

>We have tried to build a network that is all things to all people passing
>all types of data. why wast money building parallel networks when you can
>build one big one

Because power supplies, radios, and TNC's get out of whack or fail. Antenna
performance declines, weather gets you, ect ect. Water gets in the heliax,
you name it. Sometimes it's hard to figure out, or hard to arrainge a visit
to the node site. Maybe you gotta send off to Hoboken for a new crystal, ect.
Is everybody supposed to just sit with thier hands in thier laps while all
this is going on?
An old 1200 baud NetRom network will get you by while you arrainge repairs
on the high-speed stuff. (Opposite also holds true.) Any time you can set
up even a slow backup, you're way ahead. That ought to be pretty obvious.

An overloaded high-speed network isn't very fast. It's like putting a new
350 in your Chevy pickup, then filling the bed up with lead bars. If you
want the high-speed stuff to have impressive performance, find ways to cut
down on redundant data moving over it. One good way is to have a backup
network which also handles most if not all BBS access and local activity.
Leave the HS net for forwarding chores and keyboard QSO's, where HS nets
really shine.

>> All of that bulletin listing and reading is done "off to the side" of the
>> high-speed network with the setup packet ops have been using, which looks a
>> lot more sensible to me.
>The BBS is only at most two hops from a given port so there is not that
>much impact on the network,

>What may be sensible to YOU may be a quagmire to others.

I'll have to trust you on that.. You know how your stuff is performing
better than I can from here. Personally though, I'd look for ways to keep
trivial stuff off of the fast links, so they'll stay fast.

I still say the phrase "I personally do not like having a BBS on a network
access channel since a BBS is typically a hidden transmitter and a Network
Switch isn't." sounds arrogant and doesn't display a cooperative attitude.

>>
>> >We too are following a similar idea, trying to get the BBS to go BEHIND the
>> >network and then any switch port on the network becomes a port to that
>> >BBs. Why should there be retardation of growth, by putting the BBS
>> >behind the network, MORE users can ACCESS the things from greater distances,
>> >so a BBS with a given "flavor" can have much greater coverage, each NSAP
>> >being one more service freq for that BBS. Also as I pointed out by giving a
>> >BBS sysop a ADDRESS rather than a FREQ he still has something dedicated, it
>> >is just not quite so finite as the amount of freqs available. Achieves the
>> >same thing though. BBS sysop gets a place to run his/her BBS, and at the
>> >same time avoids the problems a fighting that happen when you stack 4 bbs to
>> >a freq.
>> >

Network address... It's either ROSE or TCP/IP.. How do the AX25 BBS SYSOPs
feel about being told where to operate, how to do it, and over which
networking protocol? Let me guess again: They just aren't going along with
it like you would like, are they?

There ARE big regional differences though, so most likely we're missing out
on communicating since we're used to doing things differently.
Here, for example, there is absolutely NO BBS forwarding over the ROSE net.
We use ROSE for keyboarding and TCP/IP/I-net access. They have a "ROSE
FREQ", which is respected so they can "do what they like", and BBS's like
mine don't forward there. It one of those "gentlemen's agreements", and has
served the hams around here well.
One result from this is that ROSE is lightly loaded here, and is FAST. It
works like a champ, just about any time. If I started forwarding on the ROSE
freq the guys who use it would get pretty mad, and rightly so! It won't
happen though, because I'm very happy to see those guys having fun, even if
it's not part of what I do. I stay out of thier hair.

>> When you make long-distance connects over a packet radio network, the more
>> nodes you traverse the slower things get, and the less reliable the link
>> becomes. Reliability becomes a serious consideration after moving through
>> only a few nodes. If you're covering a large area, you'll be traversing a
>> lot of nodes with your data.
>I did not say we were going long distances, we are just going across town
>across the bay, local hops, it is easier to make room on high speed links
>than it is to jam them on the few users freqs that are available.

Why DIDN'T you say? Is there traffic going THROUGH which is affected by the
local load, or is the HS link itself local only?
If three or four BBS on one channel consituted such a terrible overload of a
User freq, why are you in such a hurry to put all that stuff on your
high-speed link? Seems like you're cutting your nose off to spite your face
there.

>Again we do not encourage BBS-DXing,
>but we do encourage BBS to be a part of the network and not a problem.

I think it's pretty well a given that a BBS is part of the network. I don't
see where they can be a PROBLEM to the network unless there has been a
breakdown in communications between NodeOps and SYSOPs.
Again, I'm sure glad I don't live where there's Node/BBS wars going on. It's
a tragic waste of time and talent. Completely unnecessary.

You've got me confused.. BBS access can end up going through two
nodes/switches, but that isn't BBS DX'ing? Around here, by the time you go
through two nodes, you're 80-120 miles away. Is it pretty hilly there? What
kind of switches are you talking about? There's no need to be shy!

>>
>> By the way, the TexNet network has a network PMS, which (when all goes well
>>) can be reached from anywhere in the network, as you are speaking of. There
>> are a few guys who usually use the network PMS, and a whole three states
>> worth of packet ops who find it much easier, faster, and more rewarding to
>> access a local BBS instead of tying up TexNet.. It's been tried here, and
>> didn't end up replacing BBS's or even putting a dent in thier usage.

>> It probably won't there, either, especially if you have to convince
>> everybody to use TCP/IP software and networking in order for it to come
about.
>Did I say anything about convcincing ANYONE to use TCP/IP that is only
>ONE of the systems in use around here, we also have FBB MSYS and AA4RE
>all of which seem to work just fine. also I am sorry that your example of
>a network can not handle the traffic load of several users accessing their
>favorite BBS over the network.

Here we get back to your nebulous reference to "Network Addresses", to take
the place of "User channels".. Just what are you referring to? Sounds an
awful lot like ROSE-TCP/IP.. It sure doesn't sound like AX25, which is the
environment AX25 BBS's work best in.
The network I use could handle a lot more loading than it currently has to,
at least on this one "leg" of it. That's part of what makes it FAST.

>> Most hams prefer AX25..
>I never said I did NOT prefer AX.25 and I see no reason to continue this
>because you are not reading the whole thing. All MY connections are Ax.25
>So I guess according to you I have been exersizing a sort of "self abuse"
>by degrading AX.25 (I still can not see where I have degraded AX.25)

Network addresses? In a technical sense, ROSE uses AX25, and so does TCP/IP
for that matter.
Here it's ME being unclear.. When I say AX25, I'm referring to stuff like
NetRom, TheNet, ect. I mean AX25 over AX25, like AX25 BBS's traditionally use.
I hope there's no confusion about what I mean by AX25..
If your "system" uses Network Addresses for BBS's in place of User ports,
to me that implies Rose-TCP/IP. If this isn't the case, I sure wish you
would make some effort to accurately describe what you're proposing. Don't
be so shy!

>> down ham's throats, look out for the back-blast. Or (more likely) stand by
>> to be ignored by most hams.
>Well, I am ignored all the time anyhow, so it is no bother to me.
RGR, Have been there, done that.
> But seems like the way that we have found makes things work more easily
here >should not be taken so critically by you. The netsig is for discussing
these >things not taking others observations and making cynical targets of
them. If >you like your system where you have multiple BBS per channel, that
is just >fine, it was not working for us, so we have strived to find a fix
for it.

I'm not trying to make a cynical target of your system. You'd know all about
it if I was doing that.
What I'm doing is questioning your procedures, based on the information you
have put forward. I'll be honest and say that I saw a lot more "attitude" in
your first posting than good information, and have yet to see a
straightforward explanation of WHAT you are doing. It gets lost in the WHY.

If what you're doing works good, them obviously you can't be doing anything
all that bad. It may be that you're doing something really good, but it's
hard to tell without a good description.
If you've come up with something new and better, you should put in some time
in giving out a readable, accurate description of exactly WHAT you are
putting forward. It saves a lot of time wasted on " I didn't say that" or
" What do you mean?".

>
>> >> More importantly, are ALL of the packets ops in your area having fun?
>By the way to answer your question here, I certainly believe so especially
>since many of the them have gotten involved in not only the BBS side of
>things but also the network side, more fun for their time.

That's great. Why do you keep giving out the impression that there's some
"problem" with the BBS stations, though? That is confusing to me, as it
doesn't jibe with your statement above.

>> >AHH, but I bet in YOUR area every BBS sysop has his OWN dedicated freq...
>> >but then out there I guess you can get away with that up around lake Texoma,
>> >there ain't much population there.... Here and up where Tom lives we
>> >don't have that nicety anymore, there are MANY more BBS than there are
>> >freqs to go around so we either stack them 4 deep on a channel or figure
>> >out how to get them on the network so the can be accessed from any NSAP
>> >
>> Dedicated frequency? No..
>> High level of cooperation among packet ops, BBS SYSOPs and NodeOps? Yes!
>>
>>

>> I still suspect the difference lies in interpersonal relations. Start
>> treating the BBS SYSOPs like hams and they'll be glad to work WITH you.

>I never said we DID NOT treat our sysops as hams, our president is a BBs
>sysop of all things, boy you DO read a lot more than I print....

I guess it was the different references to problems with BBS SYSOPs all
insisting on being the on the same channel that misled me.
That, and:

> "I personally do not like having a BBS on a network access channel since a
BBS > is typically a hidden transmitter and a Network Switch isn't."

And: The story about the BBS SYSOPs who built two networks but are somehow
slighting everybody because they use the best link for forwarding.

All that confused me, making me think you might have a little problem
getting along with some of the local SYSOPs.

>> No, I've been around the block a few times. I know arrogance when I see it.
>> Why, I get to see it ALL THE TIME! (Mirror)
>Yep you are arrogant and must have broken the mirror.

Well, I guess some of us are better qualified to be arrogant, so we
naturally tend to drift in that direction.. I'll take the "5th" about the
broken mirror, though.

>
>Now why don't you crawl back to BBSSIG where you came from and let us
>get back to neworking...
>
Actually, I was on the NETSIG before I subscribed to the BBSSIG, if that's
really an issue to you. It's not to me.

Should I take this as still ANOTHER disparaging comment leveled at BBS SYSOPs?

I still bet your attitude results from SYSOPs not going for your "master
plan". Why else would you cop such an attitude about them, I wonder?

I've climbed towers, pulled hardline, gotten people off thier cans and
motivated, and have run a node myself for five years now. I also have made
contributions of my time and money to TexNet, and put in time as an HF
forwarder, so I feel right at home here on the NETSIG.

I also run a BBS, which is an integral part of the network IN ITSELF, with
it's store 'n forwarding activities. Currently and for the last year, this
BBS is the ONLY station in Texas which forwards directly into Oklahoma on
VHF/UHF.

I don't subscribe to the "Us and Them" attitude between NodeOps and SYSOPs..
It's the hallmark of poorly run, chaotic networks AND BBS's.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Never share a foxhole with someone braver than you are.

83. Re: [NETSIG:1481] Re: meteor-scatter commo

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Wed, 12 Jul 1995 09:26:10 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507120941.A13416-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Tue, 11 Jul 1995, Jack Taylor wrote:

> I've had some experience with commercial wide-band tropo systems operating
> in the 1700 MHz range, but until you mentioned it, hadn't considered what
I had not really thought about it either until I started looking at signal
levels the SSb guys were getting on a day to day basis locally. Signal levels
that are about what you would need for even 9600 FSK signalling, yes there
will be hits and fades, but it still HAS to be faster than 300b 40m
forwarding between BBS which are 100-200 miles apart.

> could be done with narrow-band amateur circuits. Looking at my references,
> there's been numerous propagation and prediction studies performed on
> systems operating from 40 to over 10,000 MHz.. My observation with several
> tropo links indicate very close agreement between predicted and the actual

> measured receive signal levels, usually within 2-3 dB. Though I haven't
> seen any, it shouldn't be difficult to design a computerized tropo-scatter
> path program. It sure would save a lot of effort in manually crunching
> numbers!
>
> There *may* be a meteor-scatter path prediction program available, possibly
> in one of the directorys on ftp.funet.fi. Seems like I saw one for
> meteor-shower scheduling and operation and there may be a path program there
> as well.
>
> For distances beyond 250 miles and up to 1200 miles for BBS forwarding, I
> like the concept of using meteor-scatter. This would be a dedicated
> point-to-point operation between two stations with carefully oriented
> antennas. Assuming an average over a 24 hour period of 200 WPM, that's
> roughly 250,000 words per day, day in and day out. If the packet protocol
> included FEC, there's a possiblity of further throughput improvement.
>

YES YES!! that is the idea, the BBS systems SHOULD be able to put that stable
and reliable mode to good use, it should be much more reliable than HF, and
since the longer haul paths are ideally suited to store and forward
operations, it makes a logical place to do BBS forwarding.

I figure that the shorter paths should be able to support real time
networking operations between switch sites, and the longer haul paths would
be terminated by BBS systems with some modifications to operations.

This is probably pretty open ground for work, there are very expensive
commercial systems operating under this concept, but I believe that the
actual cost of implementation is actually much less because it resides in
the software handling of lost data. I suspect that the protocol used by
the OSCAR's is the sort of thing we are looking for if you are using a full
duplex link, if not then you want to discipline your BBS using GPS in order
to have both systems on exactly the same time. Some sort of slotting in order
to avoid both ends transmitting at the same time in a simplex environment.

Chuck Hast   e-mail wchast@gateway.utilpart.com

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Ampr.org kp4djt.ampr.org
AX.121 3100813077

----

84. Flames

From: paul@paccomm.com
Date: Wed, 12 Jul 95 09:50:06 UTC
To: netsig@tapr.org
Message-ID: <248@paccomm.com>
Rendered body type: text/plain

Hey.
Can we PLEASE stop the "DX" BBS war and get back to some sense
on here......
Chuck knows what he's talking about & I respect his abilities
to set up a working network - he does it for a living.
Blasting away to the whole reflector is getting VERY tedious.

EVERYBODY is using AX.25 because the FCC says you MUST.


```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~    .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \_____________/
```

~~~~~~~~~~~~~~~~~~~~~~~~

85. BBS on network side (was Re: [NETSIG:1479] Re: Bulletins vs Mail)

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Wed, 12 Jul 1995 09:42:41 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950712093710.320E-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Tue, 11 Jul 1995, Andrew Funk wrote:

> We're moving towards having all BBSs remove their user port radios, and
> replace them with dedicated point-to-port links to the network backbone(s).
> Users then access to the BBSs through their local network access Switch or Node.
...
> This actually results in better performance for the users! Most traffic on a

Having finally overcome site problems in my quiet LAN we've got ROSE up
and BBS access in the same fashion as Andrew described. We have found
performance is vastly improved over the old setup. Spreading the QSO load
across two frequencies effectively allows the throughput of a direct
connection even though the data now travel through numerous L2 links.

--
Howard Goldstein hg@n2wx.ampr.org
N2WX http://www.tapr.org/~n2wx/

86. Re: [NETSIG:1436] Re: Internet and LL forwarding

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 12 Jul 1995 08:22:59 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950712081645.22157A-100000@acca>
Rendered body type: text/plain

On Mon, 10 Jul 1995, Hank Oredson wrote:

> On Jul 7, 7:34pm, Klarsen wrote:
>
> <deletia>
>
> > I want to get the mail from Tom-ham to Pete-ham there asap. If
> > you look it's just that mail which is jamming up 20 meters. I don't think
> > a single bulletin passes on that band now. Same with 30 meters.
>
> See my previous comment re HF links. I forward most all bulletins
> to W5XO (at the request of his users) on HF. It doesn't "clog"
> anything, and in fact is only done during otherwise "system idle"
> time (after all personal and nts traffic has cleared).
>
> > A typical day will see my bbs with 250 new bulletins and 6 mail
> > things. So the bottom line is stop the long distance bulletins. But I
> > have users that have like them.....
>
> What are "... mail things." ??
>
> ... Hank

Well mail things are messages from tom-ham to pete-ham. They are
mail, not bulletins/broadcasting,sorta.

Also glad your getting bulls via HF. Can you tell me about how
many bulls a day you get across the Texas? I like 30 meters for packet
and was a member of the 10-163 net. But for some reason we had a lot of
guys with poor antennas (like me) and it was hard going. I quit because I
checked and there was 3 mail messages passed in a week. Just electricity
for a week made those messages valuable beyound there worth.

-karl

87. Re: [NETSIG:1441] Re: Censorship ..NOT!

From: Gary McDuffie <mcduffie@hannibal.wncc.cc.ne.us>
Date: Wed, 12 Jul 1995 08:31:48 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507120856.A969-0100000@hannibal>
Rendered body type: text/plain
~~~~~~~~~~~~~~~~~~~~~~~~

On Mon, 10 Jul 1995, Hank Oredson wrote:

> On Jul 10, 10:12am, Gary McDuffie wrote:
> > Subject: [NETSIG:1429] Re: Censorship ..NOT!
> >
> > I see a real need to have a feature in the bbs software that is missing,
> > so far. I think a lot of the stations "censoring" what is on their
> > board, or what is accepted for forwarding by their board, would reject
> > far fewer bulletins or messages IF there was a way to have the bbs
> > software handle the traffic but not let it show up as something on the
> > board. Let it pass through 'without stopping' so to speak. Users
> > wouldn't see the in-transit disallowed traffic, and the sysop would have
> > the same option. As a for instance, WW could pass through but not be
> > subject to listing by anyone. Same for sale/want/trade/etc. If your
> > area didn't want to have religious content traffic, it could still be
> > passed to the next guy, but wouldn't have to show up on your board.
>
> I suspect all "us authors" keep wish lists ...
>
> This sounds like an interesting way to handle the situation, and
> would not be at all hard to implement.
>
> Might it be better to give the users control over what they see
> or don't see? I've had a couple requests to implent user configurable
> "interest lists" (oh no, does this sound like usenet news? of course
> it does). I'll implement something along these lines later this year.

Yes, it is just like usenet news, and I proposed that sort of operation
months ago but no one commented.

> It would work like this: each user can specify which To: or "@ BBS"
> tags they wish to see, or which ones they wish to ignore.

I think some sort of subject filter needs to be there too. Also a way
for the sysop to say he doesn't want specific items to be carried
(without all the add-on filter programs).

Gary

88. Re: [NETSIG:1446] Re: Bulletins vs Mail

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 12 Jul 1995 08:42:50 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950712082726.22157B-100000@acca>
Rendered body type: text/plain

Just thought I would give a status report on the El Paso to Las
Cruces network's. We do intentionally allow people to connect and be
hidden transmitters on our 445.1 9600 baud network. The network can be
used by any licensed ham for any purpose.

We now have the following users:

1. Keyboard to keyboard
2. BBS to BBS
3. Keyboard to BBS
4. Internet Gateway to keyboard, BBS and TCP/IP
5. DX Cluster to keyboard, Gateway to East Coast
6. TCP/IP to X1J Node routers and each other
7. APLINK transmissions from the BBS to keyboarders.

Probably forgot something, but it makes this point. EVERYONE is
using and enjoying fast service, for the most part from a 1200 baud link
to this 9600 baud link. It has been overloaded only a few times.

Now the important part. Who put up this link and paid for the
radios and feedline and tnc and modem and site fees and....here is the list:

1. BBS sysops k5di and n5rg
2. DX Cluster sysop
3. Internet Gateway sysop

So no-one can say they "OWN" this network. And no-one wants to.
But I say I am proud to be a part of this working and good network. I
would not have done it myself. But with the help and understanding of Roy
and Rick and Bill and Dan and ... it is up and has been up for 2 years
plus now.

If you want a network, quit putting up YOUR network and instead

put up OUR network.

73, de karl, k5di

89. Re: [NETSIG:1446] Re: Bulletins vs Mail

From: Gary McDuffie <mcduffie@hannibal.wncc.cc.ne.us>
Date: Wed, 12 Jul 1995 08:46:42 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507120818.A969-0100000@hannibal>
Rendered body type: text/plain

On Mon, 10 Jul 1995, Tom Moulton wrote:

> What were to happen if you had the BBSs specialize to specific topics and
> have the users USE the backbone to access the bbs they want?

I'm told that this is done in some areas.

> There are 20 BBS's I can access within a few network hops and they all have
> mostly the same tired bulletins...

One needs to ask why are so many bbses in your area? Do the network
managers let just anyone put one on if they want? Is there not a showing
of need before a bbs is put on? If there is duplication, without
overcrowding, some of the boards need to be removed.

> I think we need to take the BBS's off the user channels and tuck them away IN
> the backbone and then users from a larger area have equal access to them.

EXACTLY! Such a network already exists, I'm told (but haven't witnessed
persoanlly), and one is being modeled after it in this region. Network
managers control the network access. Anyone wanting to put a new
cluster, board, or other service on the network must do so at the network
level at 9600 baud, on a dedicated network port, where he is the only
one. There are no collisions.

> If you cry that having USEER traffic on the backbone would be worse, go look
> at the message READ counters and see how many times FEWER each bulletin would
> be sent...

Users must access on a dedicated user port. This is the only port where
collisions are allowed. All other network ports are controlled access,
dedicated point to point links with channel reuse at a distance.

> (i prefer not to have anything on the User Access channel, other than user
> stations)

My user port has no other activity on it, just users getting into the board.

Gary

90. X1J4 Bug???????

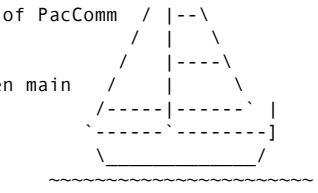
From: paul@paccomm.com
Date: Wed, 12 Jul 95 11:04:55 UTC
To: netsig@tapr.org
Message-ID: <270@paccomm.com>
Rendered body type: text/plain

Hello.
Had an interesting call from Charles Spetnagel, a PacketCluster
sysop in South CA. Here's the problem:
PC site <------> X1j4 site <--------> PC site
and another link the same to a separate PC.
However, when a longer path involving two X1j4 hops is involved,
chaos is the result. When the first nodes broadcast occurs (after
1 minute), the nodes start issuing out <RR> frames continuously.
Even without any connection!
I haven't tested this, but he reports no problem with x1j2 in the
above set-up.
The PC sites are running DRSI cards, TNCTSR and PC.
There is no BPQ code anywhere. The node site hardware is exclusively
TINY-2's running x1j4........
Anybody got any ideas what might be going on here?????????????

~~~~~~   .
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980 |\
Fax:+1 (813) 872-8696   /| \
~~~~~~

Views expressed here are not necessarily those of PacComm
Don't surf the net, SAIL it!
Captain of S/V "Spindrift", Dunedin, FL.
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems
4413 N. Hesperides St., Tampa, FL 33614-7618



91. Re: [NETSIG:1484] Flames

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 12 Jul 1995 10:44:01 -0500
To: netsig@tapr.org
Message-ID: <199507121544.KAA08628@ns1.texoma.com>
Rendered body type: text/plain

>Hey.
>Can we PLEASE stop the "DX" BBS war and get back to some sense
>on here......
>Chuck knows what he's talking about & I respect his abilities
>to set up a working network - he does it for a living.
>Blasting away to the whole reflector is getting VERY tedious.
>

" Any scientist who can't explain what he's doing to a six year-old child is
a charlatan."

Chuck may "know what he's talking about", but if he's going to expect OTHERS
to know what he's talking about he should brush up on his communications skills.

After several go-rounds, Chuck has still failed to reasonably describe just
WHAT he is advocating doing, with WHAT equipment and software under WHAT
circumstances. After doing that, his WHY stuff will probably make a lot more
sense.

The carping about BBS SYSOPs and the defensive replies have some
entertainment value, but don't do much to get his point (whatever that may
turn out to be) across to everyone.

Just what IS Chuck up to over there? I must admit he has aroused my
curiosity.. I'd like to hear a cogent, concise explanation, just a few
paragraphs or so which stick to the point.

If YOU know what Chuck's doing, maybe you oughta give the guy a hand in
describing it. I'm sure I'm not the only person on the SIG who has had thier
curiosity aroused.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                           Internet : n5pvl@texoma.com

Never share a foxhole with someone braver than you are.

92. Re: [NETSIG:1478] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 12 Jul 95 11:58:00 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c26@ram.net>
Rendered body type: text/plain

Charles let me explain...

>All I get out of that is that you sure would be tying up your network a lot,
>

The topology we use is HUB. A user channel with co-located backbone ports
so that the Switch is typically in a position to hear all users within the
LAN. So if you have a BBS at another location (typically a Home) it will be
a hidden transmitter to some of the user stations and they will use the
Switch to access the BBS.

You will then have two different situations:

1) When a hidden terminal is using the BBS the traffic will go on the channel
   twice... SLOW

2) When an exposed terminal uses the BBS the hidden terminal will cause
   interference and retries... again SLOW times

If you have access via the Switch through the network to a BBS then the performance will be the same for both stations and if there are many users accessing BBSs and other network facilities through the Switch the switch will help regulate the traffic via flow control to improve the channel sharing. (ie you won't be at the mercy of each user's DWait, SLOTtime, etc)

>I still say the phrase "I personally do not like having a BBS on a network
>access channel since a BBS is typically a hidden transmitter and a Network
>Switch isn't." sounds arrogant and doesn't display a cooperative attitude.

I miss how my personal preferences are arrogant... I'm just expressing how I would operate a BBS, not trying to force you to change your operation...

>
>Here's where I believe your reasoning breaks down. To understand WHY, you
>need to understand why the store-n-forward setup is being used in the first
>place.

Ten years ago store and forward was the only act in town, because digipeating is so unreliable. It is like old UUCP networks, now people use the WEB, access the data where it is...
>
>When you make long-distance connects over a packet radio network, the more
>nodes you traverse the slower things get, and the less reliable the link
>becomes. Reliability becomes a serious consideration after moving through
>only a few nodes. If you're covering a large area, you'll be traversing a
>lot of nodes with your data.

It sounds like your network uses a single frequency for it's backbone. While the round trip time may increase with more switch hops, the effective throughput does not change much using ROSE when you are going 5 or 10 hops, unless of course there is congestion.

>
>Short hops are generally quicker and ALWAYS more reliable over a given
>network, and give you more flexibility in dealing with changing conditions..

Not true. If I have a point to point link with many hidden transmitters vs a switch that has a backbone with point to point links with No Hidden transmitters the throughput will be generally better via the backbone.

>If node A goes down halfway across the state from you, the SYSOP at that BBS
>can easily re-route stuff thru node B, or even another network. You might
>never know about it, since the stuff gets thru anyway. Store and forward
>gives you a lot of flexibility in handling problems, but needs it less
>because it's tougher to start with.. It doesn't all have to work at one
>time, due to all the redundant paths BBS SYSOPs commonly set up for themselv
>es.

If an alternate path exists isn't it better to have a networking solution that will automatically use the path for all network connects, instead of forcing the users to 'know' how to manually route around it?

(Suggesting that the sysop re-route the stuff == manual)

We use ROSE which supports predefined alternate routes, which will be used for all connects be they BBS forwarding, Users to BBS or Users to Users.

This provides the most connectivity for all.

>Your "system" depends too much on everything working all the time, with no

What do you mean by 'system'.

>It probably won't there, either, especially if you have to convince
>everybody to use TCP/IP software and networking in order for it to come abou

who said anything about TCP/IP? That's just another application like a BBS.

To me traffic is traffic with no respect to the content...

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

93. M-S throughput thoughts

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Wed, 12 Jul 1995 08:52:45 -0700
To: netsig@tapr.org
Message-ID: <199507121601.LAA26633@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Continuing on the meteor-scatter BBS forwarding channel theme, we need to put throughput requirements into perspective. Help me out on this. W0RLI says his BBS handles 12,000 messges per month. I don't know what the average message length is, but let's say 2K. 2K times 12K msgs equals 24 megs per month. Is that in the ballpark? If so, then the forwarding system probably needs to handle at least double that, since forwarding is usually a two-way process,

If, as one of my references indicated, a meteor-scatter link can pass an average of 200 WPM (I'll double check on this point before we get too carried away), we need to convert this into bytes. Assuming 1 character is equal to 1 byte and there are 5 characters per word, then each word equals 5 bytes. 200 times 5 bytes equals 1 kbyte per minute. There are 1440 minutes in 24 hours (60 times 24). The daily average throughput is 1 kbyte times 1440; equals 1.44 megs. 30 days times 1.44 megs yields 43.2 megs per month.

Even though this falls about 5 megs short of the 48 megabyte requirement mentioned above, it certainly indicates enough promise to pursue further!

As a comparision exercise, does anyone want to post an "average" HF monthly throughput total as experienced on the 40-30-20 meter forwarding frequencies?

73 de Jack

94. Re: [NETSIG:1484] Flames

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 12 Jul 1995 12:12:39 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507121712.MAA08856@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to paul@paccomm.com:
> EVERYBODY is using AX.25 because the FCC says you MUST.

Paul - I am not sure if this is case anymore.

Greg

95. Re: [NETSIG:1477] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 12 Jul 95 10:36:08 PDT
To: netsig@tapr.org
Message-ID: <9507121036.ZM10728@hanko>
Rendered body type: text/plain

On Jul 11, 8:10pm, Chuck Hast wrote:
> Subject: [NETSIG:1477] Re: Bulletins vs Mail
>
>
> On Tue, 11 Jul 1995, Hank Oredson wrote:
> > Me too!
> Sorry but you too did not read his msg properly, we do basicly the
> same thing the BBS are facilities ON the network those that participate
> (we don't force it on them) set up a network feed with a switch dedicated
> to that BBS, givng that BBS a dedicated AX.121 address.

I'll try again: in our network the switch and the bbs (and the local instance of the chat server, etc.) are all ONE network object.
The concept of "connecting FROM the network TO the BBS" does not exist: the BBS is simply another network object just like any other.
The idea of "network feed" makes no sense to us, since the BBS is as much a part of the network as anything else. Every transmitter in the network must be considered when designing the network, whether that transmitter is called "user" or "switch" or "bbs" makes no difference: it is part of the network and has the same status as all other transmitters in the network.

Let me try and state it in the form of a few design goals:

1. There should be no hidden transmitters.

2. Traffic load should be distributed uniformly across resources.

3. More is better than less, when considering applications,
    frequencies, bands, modes, users, etc.

4. No restriction should be placed on any use of the network
    by any user at any time.

5. Growth is good.

These are the top level design goals we have used here in the
Portland metro area. Each design goal has implications, I can
go into those in detail if there is interest. For example: 1.
implies that the network designers must take into acount, and
attempt to influence, the way that users distribute themselves
across channels. For example, I have two ports on 2m. When I
see hidden transmitter problems on one of those frequencies, I
try to help the users redistribute themselves so the hidden
transmitter problems are minimized. In some cases I suggest that
one or more users should move to some 3rd frequence and access
the system across the network. In other cases I suggest that
the user might have better response by using a different bbs
(or other network resource).

> > Or am I all confused? Help me understand what you meant.

> Yes you have to be, we do not foster hidden terminals, by making the BBS
> a facility on the network the become accessable via the same point as other
> parts of the network,

I suspect we are saying the same things, perhaps the design goals
stated above will help to clarify this? It is very important that
we all understand each other ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

96. Re: [NETSIG:1479] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 12 Jul 95 10:53:09 PDT
To: netsig@tapr.org
Message-ID: <9507121053.ZM10774@hanko>
Rendered body type: text/plain

On Jul 11, 9:13pm, Andrew Funk wrote:

<deletia>

I'll comment on this because I think the differences in philosopy
are very important. It seems to me that the design criterial applied
in different parts of the country are *so* different that it may be
impossible to have meaningful discussion of goals and means.

> We also try to limit BBS forwarding during "prime time" to personal
> messages, and forward bulletins when there are fewer "wetware" users of the
> network. This leads to increased network performance for users at the small
> cost of slightly delayed bulletin forwarding.

Within the Portland metro network, a "slight delay" would be considered
to be 10 minutes. If any message traffic were delayed longer than
perhaps 20-30 minutes, the users would start to ask what is broken.

Perhaps we can move this discussion forward by giving some examples.

Current "two hop" rtt is typically 3 seconds.
rtt on "good links" is typically about 1 second.
rtt on "spanning links" which cross the metro network
between any boundary and any other boundary are typically
4 - 7 seconds. A "spanning link" may use 6-7 network hops,
and may span 200 miles or more.

Measured data rate across the backbone ranges from a low
of 1200 bps to a high of 2700 bps, averaged over several
hours of stress test, on two and three hop links.

Message forwarding is done on a 5 minute cycle for "close links"
and a 10 or 20 minute cycle for "long haul links".

Message load averages 450 per day, with highs of 600+ and lows
of 300+. Fairly flat distribution from day to day. Have not
calculated standard deviation but will probably add that to the
summaries soon.

Our present goals involve improving the rtt and bps numbers by at
least a factor of two with the existing equipment, and by a
factor of ten with new equipment.

Are we in the ballpark for what is reasonable? Are we doing a lot
better or a lot worse than other metro networks? What are the design
goals in your network?

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

97. Re: [NETSIG:1486] Re: Internet and LL forwarding

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 12 Jul 95 11:07:02 PDT
To: netsig@tapr.org
Message-ID: <9507121107.ZM10802@hanko>
Rendered body type: text/plain

On Jul 12, 9:41am, Karl F. Larsen wrote:
> Subject: [NETSIG:1486] Re: Internet and LL forwarding

>   Also glad your getting bulls via HF. Can you tell me about how
> many bulls a day you get across the Texas? I like 30 meters for packet
> and was a member of the 10-163 net. But for some reason we had a lot of
> guys with poor antennas (like me) and it was hard going. I quit because I
> checked and there was 3 mail messages passed in a week. Just electricity
> for a week made those messages valuable beyound there worth.

Will have to check the logs to get an accurate number, but it is
in the range of 150-250 per day.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
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98. Re: [NETSIG:1489] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 12 Jul 95 11:11:06 PDT
To: netsig@tapr.org
Message-ID: <9507121111.ZM10807@hanko>
Rendered body type: text/plain

On Jul 12, 10:08am, Gary McDuffie wrote:
> Subject: [NETSIG:1489] Re: Bulletins vs Mail

> > There are 20 BBS's I can access within a few network hops and they all have
> > mostly the same tired bulletins...
>
> One needs to ask why are so many bbses in your area? Do the network
> managers let just anyone put one on if they want? Is there not a showing
> of need before a bbs is put on? If there is duplication, without
> overcrowding, some of the boards need to be removed.

I am totally confused by your comments. There are many bbs systems
because we have many people who wish to use them. Some exist just
because someone wanted to run a bbs, some exist because a group of
users got together and paid for the gear.

Bottom line: this is a hobby for heavens sake! People do things because
it is fun, not because the net gods said they could. Further comments
on network philosophy in a different message.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

99. Re: [NETSIG:1495] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Wed, 12 Jul 1995 14:46:40 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507121422.A15753-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Wed, 12 Jul 1995, Hank Oredson wrote:

>
> I'll try again: in our network the switch and the bbs (and the local
> instance of the chat server, etc.) are all ONE network object.
> The concept of "connecting FROM the network TO the BBS" does not
> exist: the BBS is simply another network object just like any other.
Agree, in the local network you connect to a BBS @ a address that is
all there is to it. The address just identifies where the BBS is on
the network that is all.

> The idea of "network feed" makes no sense to us, since the BBS
> is as much a part of the network as anything else.
Not all our BBS are co-sited with the switch stacks, and as such they
still must have that dedicated data pipe for forwarding and the users
to access them over the network. Many of them still have user ports
that give direct access to a LAN channel, but more and more of them
are running the BBS at home and setting up 9k6 or 19k2 links into the
network, and publishing their access as being over the network at a
network address.

Example, you can get to my BBS kp4djt over the network, my BBS is at
a Ax.121 address of 813044. Now the users out there (on the network in
this area) know that regardless of what switch they go thru, they will
be able to get to kp4djt @ 813044, the only thing that will change is
the local switch call that they try to go through.

This another very good reason for our particular area, weather makes
Tampa Bay the lightning capital of the country, you do not want your
BBS and all the other expensive computer equipment to have something
sticking too high in the air here, it attracts very nasty electrical
discharges that can turn your whole life to a crisp.

The switch sites are usually on towers giving good coverage over all a
LAN, and at the same time these sites are usually much easier to harden
than a full blown computer with all the goodies that a BBS today should
have (servers CD-ROM for call book ect).

Some of the sysops also run a switch site, which then fits your description
of your BBs/Sitch site. But time and time again they suffer the fate of
mother nature's ire against sticks aimed into the air in a defiant state,
if you don't believe it, just send w4dph a note asking him now many times
he has replaced his whole BBs system due to lightning during just this year
alone.

> Every transmitter
> in the network must be considered when designing the network, whether
> that transmitter is called "user" or "switch" or "bbs" makes no
> difference: it is part of the network and has the same status as
> all other transmitters in the network.
Agree again, each transmitter impacts the total operation of the network.

Now, the users are mobile and appear and disappear move here and there ect.

Most BBS do not move around much, nor do switches. It is much easier to plan
these devices and get each sysop and switch op to work together to make for
a clean operating network, and then take into account the ideosyncrasies of
the day to day user. As you say, when you are setting there watching the
network operate, you can see where a user can move to another port and access
the system with less retries and contention, you can see where a user could
move to a different port (maybe because it is closer to him/her) and
establish better communications, and you can carefully point out to that user
the advantages of moving to that other switch/port and thereby obtain better
throughput for all involved.

>
> Let me try and state it in the form of a few design goals:
>
> 1. There should be no hidden transmitters.
Ditto, we agree...
>
> 2. Traffic load should be distributed uniformly across resources.
Total agreement....
>
> 3. More is better than less, when considering applications,
>   frequencies, bands, modes, users, etc.
Total agreement again...
>
> 4. No restriction should be placed on any use of the network
>   by any user at any time.
We say the network must be all things to all users, again I believe
we agree... The network must be a transparent pipe which other facilities
and networks set on top of, the highways that link the houses, villages,
towns and cities of the network. These houses,villages,towns and cities
are our different types of users, each should feel the network gives him/her
a piece of the action. The trick is to stay ahead of the traffic jam cond-
ition.

>
> 5. Growth is good.
Yes, it definitly is very good, gives us more activities to make work,
gives us more activities to play around with after we make them work.

>
> These are the top level design goals we have used here in the
> Portland metro area. Each design goal has implications, I can
> go into those in detail if there is interest. For example: 1.
> implies that the network designers must take into acount, and
> attempt to influence, the way that users distribute themselves
> across channels. For example, I have two ports on 2m. When I
> see hidden transmitter problems on one of those frequencies, I
> try to help the users redistribute themselves so the hidden
> transmitter problems are minimized. In some cases I suggest that
> one or more users should move to some 3rd frequence and access
> the system across the network. In other cases I suggest that
> the user might have better response by using a different bbs
> (or other network resource).
>
>
> > > Or am I all confused? Help me understand what you meant.
>
> > Yes you have to be, we do not foster hidden terminals, by making the BBS
> > a facility on the network the become accessable via the same point as other
> > parts of the network,
>
> I suspect we are saying the same things, perhaps the design goals
> stated above will help to clarify this? It is very important that
> we all understand each other ...
Yes we are saying the same thing from what I can see.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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---

100. Re: [NETSIG:1482] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 12 Jul 95 15:42:50 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c27@ram.net>
Rendered body type: text/plain

>From: n5pvl@texoma.com (Charles Brabham)
>Subject: [NETSIG:1482] Re: Bulletins vs Mail

I think I am begining to understand a perception problem...

TCP/IP has nothing to do with ROSE.

The ROSE address is used to specify which Switch you want to exit the network
on using AX25.

ROSE really looks like a double digipeater hop to most people.

>There ARE big regional differences though, so most likely we're missing out
>on communicating since we're used to doing things differently.
>Here, for example, there is absolutely NO BBS forwarding over the ROSE net.
>We use ROSE for keyboarding and TCP/IP/I-net access. They have a "ROSE
>FREQ", which is respected so they can "do what they like", and BBS's like
>mine don't forward there. It one of those "gentlemen's agreements", and has
>served the hams around here well.

That is a political limitation, not a technical limitation.

ROSE has been designed to support all traffic and not let any one user
consume the entire channel...

If you were to tie those independent access channels together with ROSE I
doubt that you would see major congestion, unless each of them are congested
already...

>
>Here we get back to your nebulous reference to "Network Addresses", to take
>the place of "User channels".. Just what are you referring to? Sounds an
>awful lot like ROSE-TCP/IP.. It sure doesn't sound like AX25, which is the
>environment AX25 BBS's work best in.

I see the route of the problem, a basic understanding of how ROSE is used.

A ROSE connect appears to be a simple two hop digipeater connect, Ex:

C MYBBS Via W2VY-3,201338

Where MYBBS is the destination
      W2VY-3 is the callsign of the local switch
and   201338 is the network address of the switch that provides the network
               access to the AX25 Station with the callsign 'MYBBS'

It is pure AX25 including all the routing information to get to the desired
end point.

Also the user doesn't need to know (or care) if there is a single hop, or 20
hops between their local switch (W2VY-3) and the exit switch (201338)

>Here it's ME being unclear.. When I say AX25, I'm referring to stuff like
>NetRom, TheNet, ect. I mean AX25 over AX25, like AX25 BBS's traditionally us
>e.

NetRom, TheNet, BPQ all use NetROM protocol over AX.25, a TNC is user data
over AX25 and ROSE is X.25 over AX.25.

ROSE only uses the X.25 internally, to the user it is just a big digipeater.

I hope this helps.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

101. Re: [NETSIG:1481] Re: meteor-scatter commo

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Wed, 12 Jul 1995 15:50:40 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507121554.C15753-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Jack do you have any idea where on funet.fi I might find that stuff,
I was just poking around to see if I could find anything and had no
luck, but there is a load of directories ect on there.

Chuck.

102. Re: [NETSIG:1494] Re: Flames

From: Gary McDuffie <mcduffie@hannibal.wncc.cc.ne.us>
Date: Wed, 12 Jul 1995 14:05:13 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507121458.A8925-0100000@hannibal>
Rendered body type: text/plain

On Wed, 12 Jul 1995, Greg Jones wrote:

> According to paul@paccomm.com:
> > EVERYBODY is using AX.25 because the FCC says you MUST.
>
> Paul - I am not sure if this is case anymore.

If it has been changed, why haven't we been notified? As far as I know,
all packet must be contained in AX.25 frames. HAS it been changed?

Gary

103. AX.25 requirement

From: bruce@pixar.com (Bruce Perens)
Date: Wed, 12 Jul 95 16:29 PDT
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <m0sWBDx-00063SC@mongo.pixar.com>
Rendered body type: text/plain

> EVERYBODY is using AX.25 because the FCC says you MUST.

The AX.25 requirement has been gone for about a year, and I didn't hear
about it when it happened either.

This is the new 97.109e:

        (e) No station may be automatically controlled while transmitting
        third-party communications, except a station participating as a
        forwarding station in a message forwarding system.

This paragraph used to contain the AX.25 requirement. It's gone.

        Bruce Perens
--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

104. Re: [NETSIG:1503] AX.25 requirement

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 12 Jul 1995 19:09:04 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507130009.TAA31061@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Thanks Bruce. I was trying to dig that up from something that Dewayne had
sent me two week ago. Glad you had it -- I was still looking.

I didn't read about this until about this until I saw that message from
Dewayne

So - big news for everyone that didn't know!

Cheers - Greg, WD5IVD

According to Bruce Perens:
>
> > EVERYBODY is using AX.25 because the FCC says you MUST.
>
> The AX.25 requirement has been gone for about a year, and I didn't hear
> about it when it happened either.
>
> This is the new 97.109e:
>
>   (e) No station may be automatically controlled while transmitting
>   third-party communications, except a station participating as a
>   forwarding station in a message forwarding system.
>
> This paragraph used to contain the AX.25 requirement. It's gone.
>
>   Bruce Perens
> --
> -- Attention Ham Radio Operators: For information on "Linux for Hams", read
> -- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
> -- an e-mail message containing the word "help" to info@hams.com .
>

105. Re: [NETSIG:1492] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 12 Jul 1995 19:56:11 -0500
To: netsig@tapr.org
Message-ID: <199507130056.TAA23915@ns1.texoma.com>
Rendered body type: text/plain

According to Tom...
>Charles let me explain...
>
>The topology we use is HUB. A user channel with co-located backbone ports
>so that the Switch is typically in a position to hear all users within the
>LAN. So if you have a BBS at another location (typically a Home) it will be
>a hidden transmitter to some of the user stations and they will use the
>Switch to access the BBS.
>
>You will then have two different situations:
>
>1) When a hidden terminal is using the BBS the traffic will go on the channel
>   twice... SLOW
>
>2) When an exposed terminal uses the BBS the hidden terminal will cause
>   interference and retries... again SLOW times
>
>If you have access via the Switch through the network to a BBS then the
>performance will be the same for both stations and if there are many users
>accessing BBSs and other network facilities through the Switch the switch
>will help regulate the traffic via flow control to improve the channel
>sharing. (ie you won't be at the mercy of each user's DWait, SLOTtime, etc)
>

Excellent! It's good that you have identified the network type (ROSE) you
are working with. It makes things MUCH easier for me to follow.

Let me mention here that even so, ROSE in my area is very different.. We use
ROSE for Keyboard QSO's (FAST ones!) and access to TCP/IP I-net stations
to the south. BBS forwarding is strictly VERBOTEN in this area over the
ROSE switches, (A local agreement) so in some ways you could say we've got
a pretty good setup.. 0% interference on the ROSE net by AX25 BBS's, and no
ROSE NodeOps feel the need to tell local AX25 BBS SYSOPs how, when, and
where they "may" operate thier systems. ROSE is one one freq, and just about
everything else are on others.
My BPQ switch has a port on the local ROSE freq, but it's only there to
widen the area from which the ROSE net can be accessed, and to provide
cross-connects with the TexNet and NetRom stuff on other freqs for those guys.

So this is partly why your point was confusing to me.. It involves doing
things which are OK at your locale, but would be a source of friction here,
rocking the boat.

>>I still say the phrase "I personally do not like having a BBS on a network
>>access channel since a BBS is typically a hidden transmitter and a Network
>>Switch isn't." sounds arrogant and doesn't display a cooperative attitude.

>
>I miss how my personal preferences are arrogant... I'm just expressing how I
>would operate a BBS, not trying to force you to change your operation...

Most BBS's I know of avoid using HT's ect.. Why would they somehow be more
likely to end up being "hidden transmitters" than anyone else? Your
statement doesn't reflect reality, in my experience. It sounds disparaging.

>>
>>Here's where I believe your reasoning breaks down. To understand WHY, you
>>need to understand why the store-n-forward setup is being used in the first
>>place.
>
>Ten years ago store and forward was the only act in town, because digipeating
>is so unreliable. It is like old UUCP networks, now people use the WEB,
>access the data where it is...
>>

Poor use of network resources. Redundant data - The same data going over the
same network, over and over again. That's the WEB concept, in a nutshell.
Why spend money on fast equipment, only to slow it down with inefficient
distribution?

But what the hey? If it works for you, I'd say "go for it!"

>>When you make long-distance connects over a packet radio network, the more
>>nodes you traverse the slower things get, and the less reliable the link
>>becomes. Reliability becomes a serious consideration after moving through
>>only a few nodes. If you're covering a large area, you'll be traversing a
>>lot of nodes with your data.
>
>It sounds like your network uses a single frequency for it's backbone.
>While the round trip time may increase with more switch hops, the effective
>throughput does not change much using ROSE when you are going 5 or 10 hops,
>unless of course there is congestion.
>

I think you missed my point there. If a link uses two or three nodes,
chances are you'll luck out and it will all work at one time. As you add
nodes to the link, the chances of problems, (congestion, equipment and
software problems, poor propagation) affecting the link increases rapidly.
That's a generally recognized fact.

Having said that, I'll note that ROSE doesn't seem to be affected as badly
by this as any of the other networks I've encountered.. Dunno why.

>>
>>Short hops are generally quicker and ALWAYS more reliable over a given
>>network, and give you more flexibility in dealing with changing conditions..
>
>Not true. If I have a point to point link with many hidden transmitters vs
>a switch that has a backbone with point to point links with No Hidden
>transmitters the throughput will be generally better via the backbone.
>
>

What you have just said is correct of course, but it doesn't relate to what
I was saying about short hops being more reliable. You got sidetracked there.

>>If node A goes down halfway across the state from you, the SYSOP at that BBS
>>can easily re-route stuff thru node B, or even another network. You might
>>never know about it, since the stuff gets thru anyway. Store and forward
>>gives you a lot of flexibility in handling problems, but needs it less
>>because it's tougher to start with.. It doesn't all have to work at one
>>time, due to all the redundant paths BBS SYSOPs commonly set up for themselv
>>es.
>
>If an alternate path exists isn't it better to have a networking solution
>that will automatically use the path for all network connects, instead of
>forcing the users to 'know' how to manually route around it?
>
>(Suggesting that the sysop re-route the stuff == manual)

(Tongue in cheek)
I didn't know that ROSE would automatically route to ANY other network, come
out the other side and hook back into ROSE again, all without any manual
intervention. It amazes me that ROSE knows WHICH alternative network is
working best at any given moment, so it knows which routing is most
appropriate. That's neat software!

>
>>Your "system" depends too much on everything working all the time, with no
>
>What do you mean by 'system'.
>
The idea of having user access to BBS stations over the HS network's
backbone, instead of just using local access channels and keeping the
backbone clear for more important tasks.

Most likely I've ended up seeing things this way because I operate on TexNet
and TheNet stuff. ROSE connects use what appears to be digipeating, but we
don't see the hassles from it that you end up with by digipeating on AX25.
This could be another difference between ROSE and TheNet of that order,
where something sounds pretty funny to a guy to has developed operating
habits appropriate for another networking system.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

If the facts do not conform to the theory, they must be disposed of.

106. Re: [NETSIG:1500] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 12 Jul 1995 19:56:31 -0500
To: netsig@tapr.org
Message-ID: <199507130056.TAA23927@ns1.texoma.com>
Rendered body type: text/plain

According to Tom Moulton...
>
>TCP/IP has nothing to do with ROSE.
>

RGR, I understand about the differences. I live on the "ragged edge" of the
nearest TCP/IP LAN, and connectiivity is "iffy" because of the distances
involved. So far even our own little TCP/IP LAN has connectivity problems of
it's own, due to the "spread" between interested parties.. Am working on that.

The point here is the most EFFECTIVE way (at this point in time)for local
hams to enjoy the TCP/IP I-net access ect, is by working through the local
ROSE switch..

(Well, not REALLY.. The MOST effective way is over a phone line, through an
internet access provider, of course. I try to encourage hams to do that.)

In fact, in this locale that's about all I see the ROSE system being used
for, not counting the occasional keyboard QSO of course.
So I tend to lump ROSE and TCP/IP together; Not because they are that
closely related, but because in actual use, we pretty much have to use one
to use the other here.
Again, I'm working on that. I'm hoping we can "blob onto" the big TCP/IP LAN
near Dallas sometime this year. No-one here seems to know much about TCP/IP
yet, so I'm working on the theory that we just need to get a few guys "in
between" us and the existing TCP/IP LAN to set up stations so we can work
through them.. Hope that's the right way to do it!

>
>ROSE really looks like a double digipeater hop to most people.
>

I've been telling people it may LOOK like digipeating on ROSE, but isn't a
no-no like when you digi on NetRom instead of using a node.

>>There ARE big regional differences though, so most likely we're missing out
>>on communicating since we're used to doing things differently.
>>Here, for example, there is absolutely NO BBS forwarding over the ROSE net.
>>We use ROSE for keyboarding and TCP/IP/I-net access. They have a "ROSE
>>FREQ", which is respected so they can "do what they like", and BBS's like
>>mine don't forward there. It one of those "gentlemen's agreements", and has
>>served the hams around here well.
>
>That is a political limitation, not a technical limitation.
>

RGR.. Am I learning that there's a lot more of that than I had suspected,
all around!

It probably sounds terribly restrictive from your end, but everybody here
seems happy with it. A few years back a lot of us remember reading about
nasty NodeOp/SYSOP wars somewhere on the east coast, and how those poor
folks ended up with a real mess. This might have been an influencing factor
in our local "agreement". If you have no AX25 BBS, you can't get into a war
with the SYSOPs, I guess. From what I understand, the ROSE folks use the
*NOS stations, and have never seen any evidence of hassles or problems there.
>
>

>I hope this helps.
>

It did!   Thanks, Tom!
>___

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

If the facts do not conform to the theory, they must be disposed of.

107. Re: [NETSIG:1504] Re: AX.25 requirement

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 12 Jul 1995 20:31:02 -0500
To: netsig@tapr.org
Message-ID: <199507130131.UAA25118@ns1.texoma.com>
Rendered body type: text/plain

>> This is the new 97.109e:
>>
>>   (e) No station may be automatically controlled while transmitting
>>   third-party communications, except a station participating as a
>>   forwarding station in a message forwarding system.
>>
>> This paragraph used to contain the AX.25 requirement. It's gone.
>>
>>   Bruce Perens

That sure sounds like "opportunity knocking" to me!

Has anyone been working on a "dream protocol" maximized for RF nets?

Don't tell me about old stuff.. I'm asking if there's anything NEW on the
horizon; Something real "hammy"!

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

The biggest mistake of my life: One time I thought I was wrong...

108. Hi Speed Point to Point

From: willi_r@mail.uwlax.edu
Date: Wed, 12 Jul 95 21:04:47 -0500
To: netsig@tapr.org
Message-ID: <9507130204.AA12932@mail.uwlax.edu>
Rendered body type: text/plain

I have been reading as much as I can find on the higher speed linking
hardware and wonder about whether anyone is doing ethernet speed (10mpbs)
links on microwave. Particularly the 10 GHz band with Gunnplexer type
equipment. This seems to be the best ways to get something that is not too
expensive and not too difficult to connect.
Naturally, I have read about G. Elmore's design for the 2 mega-bit link with
the suggestion that the M/A COM Gunns could be modulated for the ethernet
speed. My thinking is that ethernet cards are very low cost now and actually
cost less than the low production stuff like the PI card interface.

Who else is doing this and could you let us know of any pitfalls or
recommendations?
the one thing that I need to know is how much weather affects these
Gunnplexers? Can they be left out in the rain, and sun, and here in W.
Wisconsin, 20 below zero spells?
Do they need some kind of a radome type enclosure?

My understanding is that 56kbps is about the maximum bit rate for
omnidirectional systems. We live in a hilly terrain, so to go higher, we
would have to go to point to point. Microwave stuff looks the most practical
for PtP and we might as well go to the higher bit rate with off the shelf

parts. But the catch is the since everything is point to point, each node in the network would have to have a minimum of two separate systems (unless you happen to be on the end of the network). In some cases could it be possible (practically speaking) to have some folks on a super node that would have three or even four systems all pointing in different directions to make up a network that would have alternate paths. Each system would have to be bridged wouldn't they but if you were using ethernet then couldn't you just use off the shelf technology for that too?

Rick, KV9U
Western Wisconsin, U.S.A.

109. Re: [NETSIG:1501] Re: meteor-scatter commo

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Wed, 12 Jul 1995 20:46:09 -0700
To: netsig@tapr.org
Message-ID: <199507130354.WAA05051@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>Jack do you have any idea where on funet.fi I might find that stuff,
>I was just poking around to see if I could find anything and had no
>luck, but there is a load of directories ect on there.
>
>Chuck.

Try /pub/ham/vhf-work

esprop14.zip
meteor.zip
ms-kfx.zip
mssof42f.zip

/pub/ham/packet/misc

ms_art1.zip
ms_art2.zip
ms_exe.zip

I haven't yet looked at any of these programs, but the INDEX descriptions looked interesting.

73 de Jack

110. Re: AX.25 (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 13 Jul 1995 01:31:07 -0500 (CDT)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199507130631.BAA01060@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Just to follow-up on the message that Bruce sent -- here is what Dewayne just sent me.

Greg

According to Dewayne Hendricks:
From: dewayne@warpspeed.com (Dewayne Hendricks)
Subject: Re: AX.25

At 15:35 7/12/95, Greg Jones wrote:
>Dewayne -- what came out recenetly from the FCC that said we didn't have to
>use AX.25 for thrid party traffic.
>
>Something was posted on FCCREG by you saying you didn't catch at the tiume
>either -- just to much to keep up with.
>
>or did I get that wrong ?
>
        No, you didn't get it wrong. There is no longer an AX.25 requirement as of 2/94!!!! The FCC got rid of it when they changed the message forwarding rules. BTW, I caught it, but it doesn't seem anyone else has. Moral of the story: read the rules!!!

-- Dewayne

Dewayne Hendricks, WA8DZP ! CIS: 75210,10   AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com

```
43730 Vista Del Mar       ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204    ! AOL: HENDRICKS
Fax: (510) 770-9854       ! WWW: http://www.warpspeed.com/
-------------------------------------------------------------------------
```

111. Re: [NETSIG:1508] Hi Speed Po...

From: KN6UO@aol.com
Date: Thu, 13 Jul 1995 03:40:41 -0400
To: netsig@tapr.org
Message-ID: <950713034041_113891904@aol.com>
Rendered body type: text/plain

>I have been reading as much as I can find on the higher speed linking
>hardware and wonder about whether anyone is doing ethernet speed (10mpbs)
>links on microwave. Particularly the 10 GHz band with Gunnplexer type
>equipment. This seems to be the best ways to get something that is not too
>expensive and not too difficult to connect.
>Naturally, I have read about G. Elmore's design for the 2 mega-bit link with
>the suggestion that the M/A COM Gunns could be modulated for the ethernet
>speed. My thinking is that ethernet cards are very low cost now and actually
>cost less than the low production stuff like the PI card interface.

Rick, I have also read what I could find on the subject. None of which was new. I talked to one of the guys from the local microwave society about the prospects of high speed data on 10GHz. They have a band plan for 10GHz which includes an area for data. We have not put anything down on paper yet, but have a general design for a 10GHz point to point syncronus data link of at least 1.5meg. I also looked into using GunnPlexers and ruled them out because of there temperature sensitivity. When the tempreature changes so does the frequency. This can be overcome by using crystal stabilization but the cost goes up very dramatically. I can't add anything on ethernet cards being a part of the system. I have read what you have (I think) and am waiting for someone with more time and expertise in this area to determine fit ethernet cards are do able.

>Who else is doing this and could you let us know of any pitfalls or
>recommendations?

I know of a couple of guys using 10GHz for data(baud rate unknown) and have not been able to talk with them yet. If there is anyone out there using 10GHz, especially syncronus data, please reply to the request for more information.

>the one thing that I need to know is how much weather affects these
>Gunnplexers? Can they be left out in the rain, and sun, and here in W.
>Wisconsin, 20 below zero spells?
>Do they need some kind of a radome type enclosure?

Answered above

>My understanding is that 56kbps is about the maximum bit rate for
>omnidirectional systems. We live in a hilly terrain, so to go higher, we
>would have to go to point to point. Microwave stuff looks the most practical
>for PtP and we might as well go to the higher bit rate with off the shelf
>parts. But the catch is the since everything is point to point, each node in
>the network would have to have a minimum of two separate systems (unless you
>happen to be on the end of the network). In some cases could it be possible
>(practically speaking) to have some folks on a super node that would have
>three or even four systems all pointing in different directions to make up a
>network that would have alternate paths. Each system would have to be
>bridged wouldn't they but if you were using ethernet then couldn't you just
>use off the shelf technology for that too?

I agree with your basic picture of a microwave network. It will not be easy and cheap, but I see this type of network definately in the future of ham radio.

>Rick, KV9U
>Western Wisconsin, U.S.A.

Kevin
Just another person looking into microwave data links

112. RE: Wrong Network Model

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Thu, 13 Jul 1995 02:18:46 -0700 (MDT)
To: NETSIG TAPR <netsig@tapr.org>
Message-ID: <m0sWJTt-0002eaC@mtewe.kevin.mt.us>

Rendered body type: text/plain

Forwarded message:
> From: Barry Buelow WA0RJT <barry@ia.net>
> Subject: [BBSSIG:1182] Wrong network model
>

I'm moving this over to NETSIG...

>
> Sender: Bill Vodall <vodall@bigsky.dillon.mt.us>
> Subject: Re: NOS, Packet and the Internet
>
> .. much deleted
> >
> >Absolutely. But how? We've built an UHF backbone that links the population
> >areas of the state. Some of the paths are marginal. Most sites have multiple
> >hidden transmitters. The key site has 4 hidden transmitters hitting it. The
> >folks involved have invested time and energy getting it to this point. It's
> >at the limit of the resources available. Not only that, but some of the
> >folks involved don't really understand the problems. Nor is it important to
>
> >
> Bill, it looks like you just built a big simplex scheme. I fully understand

It's actually worse than that! Hard to believe that's possible, isn't it?

> the difficulties of organizing the resources and financing, but you
> built the wrong kind of network. The cost of doing it right is several
> times more than what you have invested now, but that's the price of
> a system with different bands and (hopefully) no hidden tx.
>
> I'm not trying to get you to go away, but you really ought to talk to
> some of the folks on NETSIG and see what experiences they may be
> able to draw on. You aren't the first, or the last, to be in this situation.

The design of the Montana backbone is not flawed.. It's pretty darn
trick and, if implemented, wouldn't have any of these problems I
mentioned above. Our group is meeting in a couple days at the Glacier-Waterton
International Hamfest and I'm bring a list of what we did right. And what we
did wrong to the meeting.

The design was right! Each backbone node would have a VHF user access port
and a single UHF transmitter. The UHF transmitter would be tied to multiple
receivers and TNC's, one set for each incoming node. Thus NO hidden transmitters
on the UHF backbone. Throughput would be further increased by running the
system FULL DUPLEX. To that end, frequencies were set up with 5 MHz standard
repeater splits. So theoretically, the system would be able to deliver nearly
wide open 1200 baud (about 100 cps) throughput. It would slow down only when
so much traffic hit a site from several incoming nodes the transmitter
couldn't keep up. Then, in the future, when things were running we'd start
moving towards higher baud rates.

The major flaw was in the implementation. Besides choosing a few paths that are
marginal, and this is strictly my opinion, the problem is that we allowed a
half-step. It was decided that we'd allow "TWO" systems coming in to a node.
Those "TWO" systems have become 3 several places and 4 at one key site. Now
nobody is considering putting up more receivers and TNC's. With the trouble
involved to clear additional frequencies at some sites - there's little
incentive to go through that hassle even if the additional input channels were
available.

To make matters worse, and this is where even a straight simplex channel
would have been better, the frequencies are all on a repeater offset.

At the site with 4 transmitters hitting it - 3 of the 4 could hear each other
if they were on the same frequency. Since they're all transmitting on one
frequency and receiving on another; they couldn't hear each other if they
were in the same room. The poor node at the center gets hammered by
collisions from all sides! Performance grinds to a halt when it gets busy.

> I wouldn't give up. Try converting a part of the network to a
> more robust system, this might be achieved by as little as a couple
> of frequency changes and a few more nodes. This could DEMONSTRATE the
> improvements and people would be more willing to provide support.

I wish the others involved could see how well the system works at times when
it's not crippled by the hidden transmitters. My access
is on the northern boundary of the network to a node stack in the
Sweet Grass Hills which links by UHF to the next node south. That's the

one with 4 stations hitting it. When my LAN frequency isn't de-sensed
by the 145.010 node (yup - haven't got that fixed yet...) and when there's
little or no traffic from the other hidden transmitters on the UHF side;
performance is great. The trace screen shows:

```
  data
  <ack>
  data
  <ack>
   ...
```

No retries. It pumps out as fast as the 1200 baud circuit will go. Then,
since the BBS I'm feeding is one of the 4 stations hitting the busy node
on UHF, things start colliding there and it slows down until the circuit
can clear itself out.

At those times, when things are running smoothly, it works well enough to
show me just how fast the system could possibly perform.

I should probably be thumped with a limp j-pole for mentioning this, but
the traffic I'm forwarding TO the Amateur network ON a RF path consists of
these TAPR and NOS-BBS mailing lists I receive from the Internet on a
telephone UUCP link.   Since it's not cool to link the two networks I guess
that makes me a LL Lid...   :-)   (thump whack smack crunch....)

The problem now is that there's very little incentive to go the added
mile and increase the performance by fixing the problems. The circuit is
so slow that most key-boarders have given up on it. The BBS messages are
slowing getting through. Even the IP packets work well enough that a whole
JNOS executable can be transferred given enough time.   So unless we can
somehow bring new life, new applications, new (rich) folks, into the network;
it's unlikely that much will change in the near future.

It's going to be real interesting seeing what kind of enthusiasm is
generated at the packet meetings during this weekend's hamfest. Who
knows - it's a full moon - so folks might be crazy enough to commit to
some major improvements.

> 73 Barry

See you all Monday after the fest....

--

Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

113. Re: [NETSIG:1509] Re: meteor-scatter commo

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Thu, 13 Jul 1995 08:54:56 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507130836.A21268-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Thank you I will do so. Pulling the stuff off today.
Chuck.

114. Re: [NETSIG:1511] Re: Hi Speed Po...

From: jra@ag9v.ampr.org
Date: Thu, 13 Jul 1995 08:21:36 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507131221.IAA28057@ag9v.ampr.org>
Rendered body type: text/plain

You (KN6UO@aol.com) write:
>I can't add anything on ethernet cards
>being a part of the system. I have read what you have (I think) and am
>waiting for someone with more time and expertise in this area to determine
>fit ethernet cards are do able.

I recall that Bdale first looked at using ethernet interfaces to the original
gunnplexer system that he and Glenn described, and discovered that the
the various time constants are based on the propagation time through the
maximum length ethernet segment, and that with longer distances (and therefore
longer propagation delays) things stop working. Worse, those time constants
are in the silicon of the ASICs on the ethernet boards, so they can't be
tweaked. As a result of that, Bdale and Glenn gave up on ethernet and used

2MB IBM PC Lan cards which apparently didn't have the same problems.

John
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

115. Re: [NETSIG:1505] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 13 Jul 95 09:56:14 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c28@ram.net>
Rendered body type: text/plain

>>
>>I miss how my personal preferences are arrogant... I'm just expressing how
>I
>>would operate a BBS, not trying to force you to change your operation...
>
>Most BBS's I know of avoid using HT's ect.. Why would they somehow be more
>likely to end up being "hidden transmitters" than anyone else? Your
>statement doesn't reflect reality, in my experience. It sounds disparaging.
>

I guess from the hills of NJ *ANY* transmitter on a user access port is a
hidden transmitter to 10-25% of the area covered by the switch located at
a commerical tower.

>
>>>
>>>Here's where I believe your reasoning breaks down. To understand WHY, you
>>>need to understand why the store-n-forward setup is being used in the firs
>t
>>>place.
>>
>>Ten years ago store and forward was the only act in town, because digipeati
>ng
>>is so unreliable. It is like old UUCP networks, now people use the WEB,
>>access the data where it is...
>>>
>
>Poor use of network resources. Redundant data - The same data going over the
>same network, over and over again. That's the WEB concept, in a nutshell.
>Why spend money on fast equipment, only to slow it down with inefficient
>distribution?

Again I will ask for data usage stats. If there is 100GB on the web and only
1% is accessed on a given day is it worth everyone having an entire copy of
the database locally?

>
>But what the hey? If it works for you, I'd say "go for it!"

>I think you missed my point there. If a link uses two or three nodes,
>chances are you'll luck out and it will all work at one time. As you add
>nodes to the link, the chances of problems, (congestion, equipment and
>software problems, poor propagation) affecting the link increases rapidly.
>That's a generally recognized fact.
>
>Having said that, I'll note that ROSE doesn't seem to be affected as badly
>by this as any of the other networks I've encountered.. Dunno why.
>
I do not know of any technical reasons for those observations for networking
systems in use for short hops (5 nodes). I can tell you that ROSE has the
lowest per packet overhead in the backbone protocol and that it can support
network connects of any number of switches. (Using normal parameters NetRom
does have a limit for the number of hops for a single network connect. Do you
know if there is a limit in the size of a TexNet network?)

>(Tongue in cheek)
>I didn't know that ROSE would automatically route to ANY other network, come
>
>out the other side and hook back into ROSE again, all without any manual
>intervention. It amazes me that ROSE knows WHICH alternative network is
>working best at any given moment, so it knows which routing is most
>appropriate. That's neat software!
>
(Tongue slightly in cheek)

If ROSE was the only system being used there would not be such problems.
Hey If you want you can run TheNet/NetRom/BPQ on top of ROSE and get the
"best of both worlds". And if TexNet uses AX.25 ROSE will pass it too!

Make the underlying network ROSE and run what ever user interface you want!

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

116. Re: [NETSIG:1514] Re: Hi Speed Po...

From: dbashaw@BayNetworks.COM (David Bashaw)
Date: Thu, 13 Jul 95 08:29:14 PDT
To: netsig@tapr.org
Message-ID: <9507131529.AA08377@rimbaud.engwest>
Rendered body type: text/plain

> I recall that Bdale first looked at using ethernet interfaces to the original
> gunnplexer system that he and Glenn described, and discovered that the
> the various time constants are based on the propagation time through the
> maximum length ethernet segment, and that with longer distances (and therefore
> longer propagation delays) things stop working. Worse, those time constants
> are in the silicon of the ASICs on the ethernet boards, so they can't be
> tweaked. As a result of that, Bdale and Glenn gave up on ethernet and used
> 2MB IBM PC Lan cards which apparently didn't have the same problems.
>
> John
> --
> John Ackermann   AG9V
> Internet: jra@ag9v.ampr.org
> Packet: AG9V@N8ACV.#DAY.OH.USA
>

The only serious application of e-ent on rf has been defined in the 802.11 spec.
The problem with e-net on rf by just hooking a 3c509 card to a gunnplexor is that
802.3 phy specs cant be met. If the specs change then it can be made to work and
you get 802.11. But this is a 1mbps solution with all the limitations of an rf
solution. My greatest frustration is having the desire to do tcp/ip packet and
then seeing all of the neat commercial offerings that supply 100kbps+ throughput
at 2.4ghz cost $1500.00 per port {:-<

My one hope is that sooner than later the data engines and rf modules for these
products will become commodity items and I can collect them into a reasonably
priced solution supporting 60kbps between my tcp machine and my friends 6
blocks away. I played with 1200b packet and became disillusioned fast.

Dave
wa6qwl

117. Re: [NETSIG:1515] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 13 Jul 1995 11:41:36 -0500
To: netsig@tapr.org
Message-ID: <199507131641.LAA04356@ns1.texoma.com>
Rendered body type: text/plain

>>>
>I guess from the hills of NJ *ANY* transmitter on a user access port is a
>hidden transmitter to 10-25% of the area covered by the switch located at
>a commerical tower.
>

Ok, so it's not just BBS stations but ALL transmitters (roughly).. It's
pretty hilly around here too, so it's easy for me to see where you're coming
from.
Why then the emphasis on BBS stations?
>>
>>>>
>>
>>Poor use of network resources. Redundant data - The same data going over the
>>same network, over and over again. That's the WEB concept, in a nutshell.
>>Why spend money on fast equipment, only to slow it down with inefficient
>>distribution?
>
>Again I will ask for data usage stats. If there is 100GB on the web and only
>1% is accessed on a given day is it worth everyone having an entire copy of

>the database locally?
>

I have no usage stats worthy of the name.
I'm talking about messages found on and forwarded by a BBS, and seriously
question the 100GB figure in relation to that.

I may wish I hadn't asked, but what do you guys have 100GB of on your packet
network?

But what the hey? If it works for you, I'd say "go for it!"
>
>>I think you missed my point there. If a link uses two or three nodes,
>>chances are you'll luck out and it will all work at one time. As you add
>>nodes to the link, the chances of problems, (congestion, equipment and
>>software problems, poor propagation) affecting the link increases rapidly.
>>That's a generally recognized fact.
>>
>>Having said that, I'll note that ROSE doesn't seem to be affected as badly
>>by this as any of the other networks I've encountered.. Dunno why.
>>
>I do not know of any technical reasons for those observations for networking
>systems in use for short hops (5 nodes). I can tell you that ROSE has the
>lowest per packet overhead in the backbone protocol and that it can support
>network connects of any number of switches. (Using normal parameters NetRom
>does have a limit for the number of hops for a single network connect. Do you
>know if there is a limit in the size of a TexNet network?)
>

Look in PSR #55, " A Primer On Reliability As Applied To Amateur Radio
Packet Networks " by Tom McDermott N5EG

Tom's not a dumb old appliance operator like me, and it would be silly for
me to quote him when you can just read his article for yourself. That way, I
won't be saying things out of context, ect.

I would imagine that the points in N5EG's article would apply to TexNet, as
they would to any other packet net.

I do know that I can have a keyboard QSO with my Dad, who lives 650 miles
south of me (Still in Texas!) over the TexNet system, and the time-lag is
reasonably short, on the order of a few seconds. Ditto for connects into
Oklahoma, Arkansas, and Missouri (When all is working, of course)..

I once made a connect at that distance over the old NetRom setup and had a
time-lag of over 5 minutes.. The link timed out, as you can imagine, before
much communicating got done.
So in that respect, TexNet seems to compare well with ROSE.

On the other hand, with Store 'n Forward messaging, you're not trying to go
all the way from A to B in one hop anyway, so cheap, easy to set up networks
like NetRom can do a very good job of moving info over long distances. It
ain't FAST, but it's MUCH better than nothing, and makes a good backup
system for fast stuff like ROSE or TexNet.
I couldn't tell you about the relative amount of network overhead when you
compare ROSE and TexNet, but Greg Jones could tell you, I'm sure. (or Tom
McDermott)
>>
>If ROSE was the only system being used there would not be such problems.
>Hey If you want you can run TheNet/NetRom/BPQ on top of ROSE and get the
>"best of both worlds". And if TexNet uses AX.25 ROSE will pass it too!
>
>
If ROSE were the only system being used, we wouldn't HAVE TheNet/NetRom/BPQ
or TexNet! (That's a JOKE, Tom! Not a dire prediction, ect..)

I don't have anything against ROSE.. In fact I like it quite a bit! But
it's not the only net around, and I don't see why everything else must be
"on top" of it.
Again, this is a regional thing: Where I live, the different nets are kept
seperate for the most part, with several ways to go from one to another.
This lets guys with different preferences enjoy things to the fullest, and
makes it VERY UNLIKELY that a problem with one particular network will "shut
down" communications in or out of any given area.
If TexNet's got a dead node, why just go over to the NetRom stuff, Rose, or
TCP/IP and "do your thing" there!
(In this area, the only alternative to TexNet for BBS MESSAGE FORWARDING is
NetRom, since FWDs are kept off of ROSE and TCP/IP)

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

If the "Sarge" can see you, so can the enemy.

118. Re: [NETSIG:1515] Re: Bulletins vs Mail

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Thu, 13 Jul 1995 09:42:29 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507131650.LAA12891@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

At 09:10 AM 7/13/95 -0500, Tom Moulton wrote:
>>>
Stuff deleted

>I do not know of any technical reasons for those observations for networking
>systems in use for short hops (5 nodes). I can tell you that ROSE has the
>lowest per packet overhead in the backbone protocol and that it can support
>network connects of any number of switches. (Using normal parameters NetRom
>does have a limit for the number of hops for a single network connect. Do you
>know if there is a limit in the size of a TexNet network?)
>

The netrom "hop limitation" is a sysop settable parameter intended as a
safety net. It's function is similar in concept to the TNC watchdog timer.
I've observed some NodeOps using it (A) because their RF networks are so
poor users can't make but a limited distance, and (B) to restrict (for
political reasons) the distance their local users can traverse in a single
connect. Other than being disconnected by the no-activity timer, which
normally is set for 15 minutes, I'm not aware of a netrom design fault that
would limit the number of hops in a single connect.

I will say that the greater the number of hops in a single connect, the less
chance/slower will the destination connect be. Given a channel that is
slightly below the congestion threshold the 20 byte overhead of netrom may
fail the connection attempt, whereas the lower overhead of rose may allow
the connect to succeed.

Regarding the netrom versus rose issue, I haven't seen any comparitive
studies showing the percentage of traffic increase over netrom that rose
would allow. Do you have some info on this to share, Tom?

I do know of some areas that had poor netrom RF links, went over to rose and
were disappointed. But here the fault lay more with the RF link design than
with the protocol.

73 de Jack

119. Re: [NETSIG:1517] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 13 Jul 95 13:34:01 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c29@ram.net>
Rendered body type: text/plain

>
>Ok, so it's not just BBS stations but ALL transmitters (roughly).. It's
>pretty hilly around here too, so it's easy for me to see where you're coming
>
>from.
>Why then the emphasis on BBS stations?

Because a BBS has a higher utilization than most other stations as it is
typically cnsidered a network facility.

>>>Poor use of network resources. Redundant data - The same data going over t
>he
>>>same network, over and over again. That's the WEB concept, in a nutshell.
>>>Why spend money on fast equipment, only to slow it down with inefficient
>>>distribution?
>>
>>Again I will ask for data usage stats. If there is 100GB on the web and onl
>y
>>1% is accessed on a given day is it worth everyone having an entire copy of
>>the database locally?
>>
>

>I have no usage stats worthy of the name.
>I'm talking about messages found on and forwarded by a BBS, and seriously
>question the 100GB figure in relation to that.
>
>I may wish I hadn't asked, but what do you guys have 100GB of on your packet
>network?

I thought you were refering to the WEB and that was my very uneducated guess
as to how much data is accessable and how much could be accessed on a typical
day.

>
>Look in PSR #55, " A Primer On Reliability As Applied To Amateur Radio
>Packet Networks " by Tom McDermott N5EG

I'll see if I can find it. (Are they online?)

>
>Tom's not a dumb old appliance operator like me, and it would be silly for
>me to quote him when you can just read his article for yourself. That way, I
>won't be saying things out of context, ect.
>
>I would imagine that the points in N5EG's article would apply to TexNet, as
>they would to any other packet net.

It depends upon the assumptions.

>>If ROSE was the only system being used there would not be such problems.
>>Hey If you want you can run TheNet/NetRom/BPQ on top of ROSE and get the
>>"best of both worlds". And if TexNet uses AX.25 ROSE will pass it too!
>>
>If ROSE were the only system being used, we wouldn't HAVE TheNet/NetRom/BPQ
>or TexNet! (That's a JOKE, Tom! Not a dire prediction, ect..)

It is not a Joke, ANY system that uses AX.25 can run ON TOP of ROSE.
I don't know if the opposite is true for any others...

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

120. Re: [NETSIG:1517] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 13 Jul 95 13:47:10 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c2a@ram.net>
Rendered body type: text/plain

One of the goals of ROSE has been to become a common lowest layer AX.25
interface that can support any AX.25 based protocol so that a wide area ROSE
network could also support experimentation with other upper layer protocols
among greatly dispersed individuals.

If one club here in NJ wanted to run TexNET and there was ROSE connectivity
out to you then the local club could become part of your TexNET network via
ROSE.

While this goal may sound idealistic and unattainable, it is good to
remember that most valuable long terms goals are.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

121. ACL/digipeating

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Thu, 13 Jul 1995 16:13:48 -0300
To: netsig@tapr.org
Message-ID: <199507131913.QAA02974@bud.peinet.pe.ca>
Rendered body type: text/plain

Last month I tried to get some information on Node locking in X1J,
comparable
to the R2, R3 functions of TN2.08B Most of the replies dealt more with the
Politics rather than any helpful information.
I may get the same reaction to this question, but please restrain yourselves, if

you dont have anything constructive to add.

I would like to know if anyone has found a way to restrict beaconing of
selected callsigns
on X1J? While the Mail Beacon of the local BBS is worthwhile (and used by
some programs) the unnecessary beaconing by individuals is not.
(I know its better to get them to stop voluntarily, but not always easy.)

73 - Ron
ve1aic

122. Re: [NETSIG:1517] Re: Bulletins vs Mail

From: Andrew Funk <kb7uv@panix.com>
Date: Wed, 12 Jul 1995 17:29:48 -0400
To: netsig@tapr.org
Message-ID: <199507132127.RAA19349@panix3.panix.com>
Rendered body type: text/plain

At 11:55 AM 7/13/95 -0500, Charles Brabham, n5pvl@texoma.com wrote:
>>>>
>>I guess from the hills of NJ *ANY* transmitter on a user access port is a
>>hidden transmitter to 10-25% of the area covered by the switch located at
>>a commerical tower.
>>
>
>Ok, so it's not just BBS stations but ALL transmitters (roughly).. It's
>pretty hilly around here too, so it's easy for me to see where you're coming
>from.
>Why then the emphasis on BBS stations?

Because, in our experience, a large percentage of traffic on a given
frequency is to/from BBS stations!

The other large traffic source on a given frequency is the network user
access Switch or Node. By making the BBSs a service available via the
network we can drastically reduce collisions and provide a bit of flow control.

>Look in PSR #55, " A Primer On Reliability As Applied To Amateur Radio
>Packet Networks " by Tom McDermott N5EG
>
>Tom's not a dumb old appliance operator like me, and it would be silly for
>me to quote him when you can just read his article for yourself. That way, I
>won't be saying things out of context, ect.
>
>I would imagine that the points in N5EG's article would apply to TexNet, as
>they would to any other packet net.

Much of the reliability issues are determined by two factors: network
acknowlegment method and network topology.

If the network is completely uses hop-by-hop acks then it will be much more
reliable than one using end-to-end acks.

If the network is using protected, point-to-point links for inter-switch
backbone links then it will be far more reliable than one with 3 or more
stations sharing a link frequency.

Much of this discussion has been, as I see it, a bit "out of phase."

Your opinions and experience are, of course, helpful. But note that if you
are truly "a dumb old appliance operator", as you stated, then you might
consider accepting that those who have more experience likely can back-up
what they're saying.

>On the other hand, with Store 'n Forward messaging, you're not trying to go
>all the way from A to B in one hop anyway, so cheap, easy to set up networks
>like NetRom can do a very good job of moving info over long distances. It
>ain't FAST, but it's MUCH better than nothing, and makes a good backup
>system for fast stuff like ROSE or TexNet.

With a network topology as described above, NetROM can approach the speed of
a ROSE-based network. And for store-and-forward, networking such as NetROM,
ROSE, etc. is only needed if the BBSs are not able to Hit" each other directly.

>I couldn't tell you about the relative amount of network overhead when you

>compare ROSE and TexNet, but Greg Jones could tell you, I'm sure. (or Tom
>McDermott)

Perhaps you don't realize that Tom Moulton, W2VY, *wrote* the ROSE
implementation of X.25. He's publihed papers on the relative overhead, etc.
He doesn't need to look up others' work on the subject except to confirm his
own.

>I don't have anything against ROSE.. In fact I like it quite a bit! But
>it's not the only net around, and I don't see why everything else must be
>"on top" of it.

Tom is trying to point out that ROSE can support all other AX.25 traffic
transparently. Last I heard this was not the case for most other networks
in use over Amateur Radio.

>Again, this is a regional thing: Where I live, the different nets are kept
>seperate for the most part, with several ways to go from one to another.
>This lets guys with different preferences enjoy things to the fullest, and
>makes it VERY UNLIKELY that a problem with one particular network will "shut
>down" communications in or out of any given area.

Redundancy is great, and should be a consideration when designing networks.
And as packet networking is something that people do, it's going to be
political... And without a national consensus there will be regional
differences.

>If TexNet's got a dead node, why just go over to the NetRom stuff, Rose, or
>TCP/IP and "do your thing" there!
>(In this area, the only alternative to TexNet for BBS MESSAGE FORWARDING is
>NetRom, since FWDs are kept off of ROSE and TCP/IP)

Your parenthetical comment in part negates the prior sentence. It's too
bad, IMHO, that the politics in your region has led to the ROSE network
refusing to carry certain traffic.

73, Andy
--

  _____________________ Andrew Funk, KB7UV _____________________
 | Tech Producer/Editor   Internet: kb7uv@panix.com |
 | WCBS-TV Channel 2 News   http://www.webcom.com/~arfunk/ |
 | New York, NY USA   --- INSERT COMMERCIAL HERE --- |

123. Re: [NETSIG:1490] X1J4 Bug???????

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 13 Jul 1995 15:57:25 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950713155318.27805C-100000@acca>
Rendered body type: text/plain

On Wed, 12 Jul 1995 paul@paccomm.com wrote:

> Hello.
> Had an interesting call from Charles Spetnagel, a PacketCluster
> sysop in South CA. Here's the problem:
> PC site <------> X1j4 site <--------> PC site
> and another link the same to a separate PC.
> However, when a longer path involving two X1j4 hops is involved,
> chaos is the result. When the first nodes broadcast occurs (after
> 1 minute), the nodes start issuing out <RR> frames continuously.
> Even without any connection!

Paul, the problem may be that the Ham used the same setup file he
used for the xij2 node and if so it will not be fully correct. Another
thing to check is the current configuration. You can change EVERYTHING
but the callsign as a remote sysop! For example he may have something set
badly. I suggest he set it up EXACTLY as the example that comes with
Robert's software. Then after it runs well, experiment...

73, de karl k5di

> I haven't tested this, but he reports no problem with x1j2 in the
> above set-up.

> The PC sites are running DRSI cards, TNCTSR and PC.
> There is no BPQ code anywhere. The node site hardware is exclusively
> TINY-2's running x1j4........
> Anybody got any ideas what might be going on here?????????????
>
> ~~~~~~   .
> Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980 |\
> Fax:+1 (813) 872-8696   /| \
> Views expressed here are not necessarily those of PacComm / |--\
> Don't surf the net, SAIL it!   / | \
> Captain of S/V "Spindrift", Dunedin, FL.   / |----\
> Tall rig (58'), Winged Keel (4' 2"), full batten main   / | \
>   /-----|------` |
> PacComm Packet Radio Systems   `------`--------]
> 4413 N. Hesperides St., Tampa, FL 33614-7618   _____________/
>   ~~~~~~~~~~~~~~~~~~~~~~~
>
>

124. Re: [NETSIG:1518] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Thu, 13 Jul 1995 18:07:52 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507131705.G24732-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Jack, I live near one of those areas, the one problem that the
testers did not take into account was that Tom's timers were
very timid I think they were much more so than ka9q's. These
fellows just burned eproms set up the network and did not adjust
the timers so that the ROSE would be as agressive as the netrom
network they were comparing it against.

That was the only problem I found. I did do some testing back last
year with the help of Paul Evans, who is very well versed in NetRom
TheNet timing, and also I asked Paul so as to offset my personal
biases.

I do not know where I have those files, but the results were quite
interesting. The difference starts showing up as you start handing
larger blocks of data to the network.

I really do not care to get into that one again, but it was quite
interesting to note.

I personally believe that each system has it's good points and bad
points. But one thing that Tom has done is to make ROSE able to carry
the others protocols incapsulated inside the ROSE frames, allowing
say two NetRom type networks to connect across a interviening ROSE
network, exchange data frames with netrom PID and start functioning
as though they were next door to one another (plus or minus propagation
time). I also believe that the other great advantage introduced with
ROSE is the ability to issue a connect to your target station and of
course provided that the network between is there, have that connection
come up with nothing else needed to be done.

I have set up a lot of ROSE networks and have also used ROSE to carry
TCP/IP. I believe that the low overhead has alowed certain paths here
in florida to continue to operate when other higher overhead protocols
would have given up. Of course the down side is that these links are
very slow, and should probably be killed until another switch or whatever
hardware needed to clean up the problem is added making that link run
fast.

Our biggest battle has been the same as all the others involved in
networking,that has been getting the sysops (switch, node, BBS ect)
to understand that NONE of these things work very well on a flat network,
and even less on a greatly overloaded network. I believe the network system
choice is predicated by what the users want.

We have seen a growth of users who want to get on the network and keyboard
back and forth. They are not so much interested in node hoping as just key-
boarding, and the ease of issuing a single connect command to a distant call
with the addition of what looks like two digi fields, once understood has
been well received. A good example of this can be seen in the USER app
running in one of the network switches used to link TX and FL. I can usually
see links running from up in Jacksonville FL down through Tampa over the
Dallas on the fibre link and up into Oklahoma on RF again. I would suppose
that discounting the fibre part of it there is still a good 500 miles of

RF, and all of it over flat terrain, no mountains and most switch sites are not that high anyhow. Again that 500 miles is straight line, the links zig and zag here and there probably adding I am not sure how many miles to the paths. I calculate that the above mentioned path has at least 50 switches (counting those in the stacks) and the user who initiated the link only had to issue a single command connect.

Others who liked to node hop were sort of left out with ROSE, now that the USERS application shows so much information, you can probably switch hop with just as much ease on ROSE as you can with TheNet, and perhaps (according to some) with greater ease.

for building a fast self generating small network, I believe that the NetRom concept is very hard to beat, but for very large networks the concept that ROSE is based on becomes almost imperative, unless you want to make multiple connects as you cross large expanses of terrain.

Just my observations, I have much more time with ROSE than NetRom so I can not consider my self a true judge between the two. I like to play around with it all, and consider that areas such as TX and OK where they have several different networks to observe are probably good places to learn how each network operates under similar conditions, providing of course that all the network providers have set up similiar systems.

Well I have waxed long on this one, sorry about that.

The most important thing is to enjoy our network. Setting at home and connecting to a friend off in the distance somewhere and keyboarding back and forth maybe a wast to some, it is a great joy to me, so I really enjoy a network that does not make me work to use it. That is what I feel about ROSE. I do not have to do much to set up a path to anyone on the network.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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---

125. Re: [NETSIG:1518] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 13 Jul 95 18:28:47 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c2e@ram.net>
Rendered body type: text/plain

>Stuff deleted
>
>>I do not know of any technical reasons for those observations for networkin
>g
>>systems in use for short hops (5 nodes). I can tell you that ROSE has the
>>lowest per packet overhead in the backbone protocol and that it can support
>
>>network connects of any number of switches. (Using normal parameters NetRom
>
>>does have a limit for the number of hops for a single network connect. Do y
>ou
>>know if there is a limit in the size of a TexNet network?)
>>
>
>The netrom "hop limitation" is a sysop settable parameter intended as a
>safety net. It's function is similar in concept to the TNC watchdog timer.
>I've observed some NodeOps using it (A) because their RF networks are so
>poor users can't make but a limited distance, and (B) to restrict (for
>political reasons) the distance their local users can traverse in a single
>connect. Other than being disconnected by the no-activity timer, which

>normally is set for 15 minutes, I'm not aware of a netrom design fault that
>would limit the number of hops in a single connect.

My understanding of the reason for limiting the distance is that if the
distance is too far you will actually have additional retransmissions at
level 4 causing additional (un-needed) traffic.

>Regarding the netrom versus rose issue, I haven't seen any comparitive
>studies showing the percentage of traffic increase over netrom that rose
>would allow. Do you have some info on this to share, Tom?

I do have some stats collected by KP4DJT where sending 4K out and having it
echoed back and TheNet took twice as long as ROSE.

These results were shared here on netsig and there was a lot of discussion
and the bottom line was anyone who didn't think the test was vaild is welcome
and encouraged to perform a test themselves. They will receive support from
myself and other ROSE sysops.

>I do know of some areas that had poor netrom RF links, went over to rose and
>were disappointed. But here the fault lay more with the RF link design than
>with the protocol.
>

No software can fix a poorly designed RF network...

tom

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

126. Re: [NETSIG:1525] Re: Bulletins vs Mail

From: Jtaylor@usacec-osigw.army.mil
Date: Thu, 13 Jul 95 16:40:30 MST
To: netsig@tapr.org
Message-ID: <199507140007.TAA20201@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Regarding the comments by Chuck Hast and Tom Moulton about rose and netrom
operation, I found them to be very interesting. It's very useful to all
of us when objective protocol comparisions are made. Perhaps I've
mentioned this before, but it would be a big aid in network development
to have an agreed upon "standard" by which not only could protocol
comparisons be made but also protocol modifications could be compared.

Off-hand, it seems like a couple of factors to have in the "standard"
would be channel loading simulations at various levels as well as
S/N simulations. Then the goal would be to see at what point the
protocol under test breaks down. As an afterthought, baudrates should
be included as well to see where timing problems crop up.

Anyway, if such a "standard" was available, it sure would be a big aid
during protocol discussions :-)

Oh yes, regarding the netrom "hop inhibitor" it's original default was
32 hops I believe and it's function is to prevent L3 connect requests
to hammer the network while chasing "false routes" due to a recent
node failure. The weakness I see in the netrom dynamic routing procedure
is the delay it takes for the entire network to get updated so's to
only include current operational nodes. When a netrom node goes down,
it typically takes hours before the entire network has purged knowledge
of the failed node.

Of course in this day and age of wall-to-wall BBS forwarding, one is
lucky to make 3 hops, let alone 32! However in the "good old days"
when the netrom system was lightly loaded, long distances were commonplace.
I'd have to check, but think the connect record was held by VE3KYZ who
traversed from near Ontario, Canada thru around 50 nodes to connect to
my mailbox here in southeastern Aridzona, several years ago. Today of
course, a keyboarder is hard pressed to even get out of the state.

73 de Jack

127. Re: [NETSIG:1522] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 13 Jul 1995 21:33:29 -0500

To: netsig@tapr.org
Message-ID: <199507140233.VAA14454@ns1.texoma.com>
Rendered body type: text/plain

According to Andrew Funk....

>>Look in PSR #55, " A Primer On Reliability As Applied To Amateur Radio
>>Packet Networks " by Tom McDermott N5EG
>>
>>Tom's not a dumb old appliance operator like me, and it would be silly for
>>me to quote him when you can just read his article for yourself. That way, I
>>won't be saying things out of context, ect.
>>
>>I would imagine that the points in N5EG's article would apply to TexNet, as
>>they would to any other packet net.
>
>Much of the reliability issues are determined by two factors: network
>acknowlegment method and network topology.
>
>If the network is completely uses hop-by-hop acks then it will be much more
>reliable than one using end-to-end acks.
>
>If the network is using protected, point-to-point links for inter-switch
>backbone links then it will be far more reliable than one with 3 or more
>stations sharing a link frequency.
>

Did you look at the article, by the way?? Read carefully.

>Much of this discussion has been, as I see it, a bit "out of phase."
>
>Your opinions and experience are, of course, helpful. But note that if you
>are truly "a dumb old appliance operator", as you stated, then you might
>consider accepting that those who have more experience likely can back-up
>what they're saying.

Not likely! I used to be a "dumb old job-shop machinist", and found myself
having to explain the "facts of life" to engineers and other folks who
should have known better on many occasions. They didn't always listen - And
they didn't always like the results.

You might consider accepting that the EXPERTS don't always know best.. They
just think they oughta, since they've been at it so long. A lot of times
they have an axe to grind or a pet project they have developed a myopic
attitude about, and this gets in the way of the god-like infallability we
would all like to see them display.

I been thanked on many occasions by engineers who had thier reputations
preserved by some "dumb old machinist". Some weren't so thankful, but they
were on thier own after that and suffered for it. The REAL EXPERTS don't
discount the opinions of folks who are less qualified.

Recently W0RLI thanked me for expressing an idea that had been floating
around in my pan for a while. (As you might expect, it was a real simple
idea.) He has been writing packet BBS software longer than anyone, and I've
written very few programs of ANY description. Still, despite my lack of
qualification, I was able to come up with something he found to be useful.
Despite his qualifications, he was able to find something useful in what I
had to suggest.

So get off your high-horse, and get real.

>>On the other hand, with Store 'n Forward messaging, you're not trying to go
>>all the way from A to B in one hop anyway, so cheap, easy to set up networks
>>like NetRom can do a very good job of moving info over long distances. It
>>ain't FAST, but it's MUCH better than nothing, and makes a good backup
>>system for fast stuff like ROSE or TexNet.
>
>With a network topology as described above, NetROM can approach the speed of
>a ROSE-based network. And for store-and-forward, networking such as NetROM,
>ROSE, etc. is only needed if the BBSs are not able to Hit" each other directly.
>

We have to deal with distances here in Texas, and are used to it. There are
MANY places here where the nearest BBS is a long ways off. For example, I
live near the "twin cities" of Sherman/Denison, and my nearest forwarding
pardner is roughly 80 miles away from my QTH, in Dallas. I've got it easy,
compared to many of the BBS stations in this state.

>

>>I couldn't tell you about the relative amount of network overhead when you
>>compare ROSE and TexNet, but Greg Jones could tell you, I'm sure. (or Tom
>>McDermott)
>
>Perhaps you don't realize that Tom Moulton, W2VY, *wrote* the ROSE
>implementation of X.25. He's publihed papers on the relative overhead, etc.
>He doesn't need to look up others' work on the subject except to confirm his
>own.
>

You asked for figures, and I gave you the best info I had on where to look.
If you already have the figures, why ask for them?
I didn't know that Tom did the things you mentioned. It's not surprising to
me, as I had already figured out that he is pretty sharp. I doubt seriously
that Tom disdains the work of others. You're doing him a dis-service by
making that implication.

>>I don't have anything against ROSE.. In fact I like it quite a bit! But
>>it's not the only net around, and I don't see why everything else must be
>>"on top" of it.
>
>Tom is trying to point out that ROSE can support all other AX.25 traffic
>transparently. Last I heard this was not the case for most other networks
>in use over Amateur Radio.

I don't doubt what you say. Nonetheless, why put all your eggs in one basket?
What I doubt is the WISDOM of having everything "on top" of ROSE, or any
other single network. Diversify, and you won't get caught with your britches
down when things start going wrong. They do.

>Redundancy is great, and should be a consideration when designing networks.
>And as packet networking is something that people do, it's going to be
>political... And without a national consensus there will be regional
>differences.

The regional differences are great! That way, different ideas get tried out
in the REAL WORLD, and no-one has to settle for the EXPERT's opinions.. They
can just check the facts instead. Have you ever seen two EXPERTS disagree?
Of course you have! What better arena to test thier arguements in than the
REAL WORLD?

Also, what's good in Vermont may be really dumb in New Mexico. Different
needs, different attitudes, different conditions.

>>If TexNet's got a dead node, why just go over to the NetRom stuff, Rose, or
>>TCP/IP and "do your thing" there!
>>(In this area, the only alternative to TexNet for BBS MESSAGE FORWARDING is
>>NetRom, since FWDs are kept off of ROSE and TCP/IP)
>
>Your parenthetical comment in part negates the prior sentence. It's too
>bad, IMHO, that the politics in your region has led to the ROSE network
>refusing to carry certain traffic.

Nope, it doesn't.. It's a clarification, in the interest of being accurate.

IMHO, I'd be very concerned if any ONE NETWORK carried all the traffic.
Since my BBS has two networks to utilize, (TexNet, NetRom) I feel quite
content, and feel no need to pester the ROSE guys. Get four seperate
networks going in YOUR area, set up cross-connections, and you'll start to
understand what I mean.. There ARE advantages to keeping your eggs in
SEVERAL baskets.

If ROSE was the only network around, then they'd be carrying tons of BBS
traffic, and complain about BBS's being "hidden transmitters" and so on.

No, thanks! I think I'll just have to pass on that idea.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Good judgement comes from experience.
Experience comes from bad judgement.

128. Re: [NETSIG:1526] Re: Bulletins vs Mail

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Thu, 13 Jul 1995 22:43:21 -0400 (EDT)
To: netsig@tapr.org

Message-ID: <Pine.3.89.9507132220.A26916-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Standards and benchmarks, ahh yes I would greatly like to see more done
in this area too. After the testing that Paul Evans and I did at PacComm
last year, we have seen nothing else really done. I hope to get another
test bed going to do more of this type of testing, but I want to see
others do so, with the idea that if enough of us gather data, we will
come up with good stable numbers in terms of timing and overhead consider-
ations.

It is good to set here and discuss different networking ideas without
getting into a flamefest...

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

129. M-S info source

From: Jtaylor@usacec-osigw.army.mil
Date: Thu, 13 Jul 95 19:48:37 MST
To: netsig@tapr.org
Message-ID: <199507140315.WAA21723@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Today had a chance to glance at three files relating to packet meteor-
scatter commo. These files are recommended reading for those curious
about meteor-scatter. They are located at ftp.funet.fi in the /pub/ham/
packet/misc directory and are titled:

ms_art1.zip
ms-art2.zip
ms_exe.zip

The author of this effort it Pino Zollo, I2KFX. After unfolding these
files, there is a doc file called ms-ing.doc which kinda gives an
overview of the project. In addition there are a number of .gif files,
some of which show QSL cards received via meteor-scatter and some which
show schematics and block diagrams of Pino's setup. One .gif titled
rx_big.gif decoded into a black screen and I'm not sure if this is a fault
of my gif viewer. If someone else pulls these files off, I'd be interested
in whether or not they too had a similar problem.

As far as I can tell, Pino has provided a pretty good set of information
on this topic, for others to follow. He also provides an .exe program for
a PC which apparently is tailored to control a PSK TNC in KISS mode.

To summarize, the building blocks for meteor-scatter are pretty easy to
come by. One needs a 100 watt or better 6M SSB rig, a nominal 4 element
6 meter beam, a PSK modem similar to those used on the pacsats, a PC (I
didn't check but looks like an XT or better), the M-S software, and
someone on the destination end with compatible gear.

More and more, setting up a BBS forwarding network utilizing 6 meter meteor-
scatter techniques, is looking very "do-able"!

73 de Jack

130. RE: [NETSIG:1521] ACL/digipeating

From: roberts@ses6a.bt.co.uk
Date: Fri, 14 Jul 1995 08:09:53 +0100
To: netsig@tapr.org
Message-ID: <199507140710.CAA24851@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Do you need digipeating ? Simplest thing is to disable it.

There are controls in the code for enabling / disabling digipeating,
but not for selective control.

You can also selelectively control digipeat uplinks and downlinks
to the node.

Is there a need for selective control ? What would you want ?

Dave

131. Re: [NETSIG:1512] RE: Wrong Network Model

From: rdonnell@eskimo.com (Robert Donnell)
Date: Fri, 14 Jul 1995 00:55:19 -0700
To: netsig@tapr.org
Message-ID: <199507140756.AAA19597@mail.eskimo.com>
Rendered body type: text/plain

>
>I'm moving this over to NETSIG...
>
>The design of the Montana backbone is not flawed.. It's pretty darn
>trick and, if implemented, wouldn't have any of these problems I
>mentioned above. Our group is meeting in a couple days at the Glacier-Waterton
>International Hamfest and I'm bring a list of what we did right. And what we
>did wrong to the meeting.
>
>The design was right! Each backbone node would have a VHF user access port
>and a single UHF transmitter. The UHF transmitter would be tied to multiple
>receivers and TNC's, one set for each incoming node. Thus NO hidden
transmitters
>on the UHF backbone. Throughput would be further increased by running the
>system FULL DUPLEX. To that end, frequencies were set up with 5 MHz standard
>repeater splits. So theoretically, the system would be able to deliver nearly
>wide open 1200 baud (about 100 cps) throughput. It would slow down only when
>so much traffic hit a site from several incoming nodes the transmitter
>couldn't keep up. Then, in the future, when things were running we'd start
>moving towards higher baud rates.
>
>The major flaw was in the implementation. Besides choosing a few paths
that are
>marginal, and this is strictly my opinion, the problem is that we allowed a
>half-step. It was decided that we'd allow "TWO" systems coming in to a node.
>Those "TWO" systems have become 3 several places and 4 at one key site. Now
>nobody is considering putting up more receivers and TNC's. With the trouble
>involved to clear additional frequencies at some sites - there's little
>incentive to go through that hassle even if the additional input channels were
>available.
>
>To make matters worse, and this is where even a straight simplex channel
>would have been better, the frequencies are all on a repeater offset.
>
>At the site with 4 transmitters hitting it - 3 of the 4 could hear each other
>if they were on the same frequency. Since they're all transmitting on one
>frequency and receiving on another; they couldn't hear each other if they
>were in the same room. The poor node at the center gets hammered by
>collisions from all sides! Performance grinds to a halt when it gets busy.
>
>I wish the others involved could see how well the system works at times when
>it's not crippled by the hidden transmitters. My access
>is on the northern boundary of the network to a node stack in the
>Sweet Grass Hills which links by UHF to the next node south. That's the
>one with 4 stations hitting it. When my LAN frequency isn't de-sensed
>by the 145.010 node (yup - haven't got that fixed yet...) and when there's
>little or no traffic from the other hidden transmitters on the UHF side;
>performance is great. The trace screen shows:
>
> data
> <ack>
> data
> <ack>
>   ...
>
>No retries. It pumps out as fast as the 1200 baud circuit will go. Then,
>since the BBS I'm feeding is one of the 4 stations hitting the busy node
>on UHF, things start colliding there and it slows down until the circuit
>can clear itself out.
>

>At those times, when things are running smoothly, it works well enough to
>show me just how fast the system could possibly perform.
>
>I should probably be thumped with a limp j-pole for mentioning this, but
>the traffic I'm forwarding TO the Amateur network ON a RF path consists of
>these TAPR and NOS-BBS mailing lists I receive from the Internet on a
>telephone UUCP link.   Since it's not cool to link the two networks I guess
>that makes me a LL Lid...   :-)   (thump whack smack crunch....)
>
>The problem now is that there's very little incentive to go the added
>mile and increase the performance by fixing the problems. The circuit is
>so slow that most key-boarders have given up on it. The BBS messages are
>slowing getting through. Even the IP packets work well enough that a whole
>JNOS executable can be transferred given enough time.   So unless we can
>somehow bring new life, new applications, new (rich) folks, into the network;
>it's unlikely that much will change in the near future.
>
>It's going to be real interesting seeing what kind of enthusiasm is
>generated at the packet meetings during this weekend's hamfest. Who
>knows - it's a full moon - so folks might be crazy enough to commit to
>some major improvements.
>
>> 73 Barry
>
>See you all Monday after the fest....
>
>--
>
>Bill
>
>Reply-To: vodall@bigsky.dillon.mt.us
>Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>
>
>
>

Hi Bill, et. al.

It sounds like your best move at this point would be to actually solve the
hidden transmitter problem - pretty simply. Turn your system into a
repeater - or preferably a bit regenerator.

Presumably some of the systems that have 'added' themselves to your network
are working only through your site - you're the only one who has a receiver
set up for them. Set the system up so that one of your ports (the one - or
one of the ones - that you've gotten the hidden transmitters parked on) is
the input, and the output is shared between the network TNC and the data
stream coming from that receiver. Give the TNC priority, but also run it in
half-duplex mode. Get the interlopers also set up for half duplex. That
way they won't transmit when the input is busy - or when there's traffic
from the TNC. An improvement this offers is that all the stations operating
via the repeater will be able to connect direct - and not have to have your
TNC relay the packets. What can be even better is to convert it to strictly
be a repeater, especially if it's a tough to reach site - actually get the
networking hardware off the hill - and have a simple (pretty simple, anyway)
repeater there.

Give that some thought. We've had really good success here in the Seattle
area with repeaters - one on 222 MHz has been there for over 10 years.

73, and good luck building the network.

Bob

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
---

132. Re: [NETSIG:1527] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 14 Jul 95 06:32:25 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c2f@ram.net>
Rendered body type: text/plain

>
>According to Andrew Funk....
>

I think Andy misread the part where I said I didn't know the TEXNET
overhead...

oops... :}

>If ROSE was the only network around, then they'd be carrying tons of BBS
>traffic, and complain about BBS's being "hidden transmitters" and so on.

Charles, The hidden transmitter problem is common to all of the networking
systems that have been discussed, not just ROSE.

And this is where we learned about it from:

>Good judgement comes from experience.
>Experience comes from bad judgement.
>
>
hi hi! (or should i say hee hee or ho ho)

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

133. Re: [NETSIG:1529] M-S info source

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 14 Jul 1995 09:20:17 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507140900.A29033-0100000@gateway.utilpart.com>
Rendered body type: text/plain

I pulled it off funet.fi yesterday, but got busy with cleaning up a
mess on a pc based switch, so I just reformated the whole thing and
added a small partition to do maintenence on the thing, that took the
whole nite between honey-do's 8-|

I will try to unpacke them and read them Jack.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
----

134. Re: [NETSIG:1527] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 14 Jul 95 09:19:54 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c30@ram.net>
Rendered body type: text/plain

>Look in PSR #55, " A Primer On Reliability As Applied To Amateur Radio
>Packet Networks " by Tom McDermott N5EG

I have read Tom's article.

It deals with MTBF and MTTR of systems and the components.

He basically is saying that there must be alternate routes to get between all
important locations. (Alternate path == switches in parallel)

He also mentions that typical outtages last from days to weeks, since this is
just a hobby and people go on vacation...

Also I would like to expand that to say that with larger and larger networks
it is a requirement that any highly usable network should provide automatic

alternate routing during failures.

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

135. Re: [NETSIG:1521] ACL/digipeating

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Fri, 14 Jul 1995 11:41:10 -0300
To: netsig@tapr.org
Message-ID: <199507141441.LAA04431@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>>I would like to know if anyone has found a way to restrict beaconing of
>>selected callsigns on X1J?
>>
>
>Ron, This isn't clear to me..
>
>Are the user stations beacons going via (digipeat) through the node?
>If so then besides showing them what real beaconing is... (set the
>node broadcast to 3 sec for a short time), the only ways would be
>shut off the digi function, or an effective lockout. Are you
>affiliated with a club, or would group pressure assist you?
>

The beacons in this instance are from someone on the Network channel side of
a node and he is beaconing across it and in/out of the LAN node.
Peer and club pressure has already been tried. The options of disabling
digipeating
or blocking his callsign completely are not Politicially proper.
As I said, I'm looking for a technical answer not a Political one, as most
have been
tried without success.

>Also is the beacon the one associated with the APRS programs?
>HTH
>73 de Shawn, N7XBM.
>shawnpat@sierra.net Shawn Skinner
>
No we have an APRS LAN and it serves its purpose properly.

The ACL seems to be able to control Level 2 & 3 actions and it would be nice if
it could control UI frames as well, by selected callsign.

73 - Ron ve1aic

136. Re: [NETSIG:1534] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Fri, 14 Jul 1995 11:23:53 -0500
To: netsig@tapr.org
Message-ID: <199507141623.LAA22204@ns1.texoma.com>
Rendered body type: text/plain

According to Tom Moulton...
>>Look in PSR #55, " A Primer On Reliability As Applied To Amateur Radio
>>Packet Networks " by Tom McDermott N5EG
>
>I have read Tom's article.
>
>It deals with MTBF and MTTR of systems and the components.
>
>He basically is saying that there must be alternate routes to get between all
>important locations. (Alternate path == switches in parallel)
>
>He also mentions that typical outtages last from days to weeks, since this is
>just a hobby and people go on vacation...
>
>Also I would like to expand that to say that with larger and larger networks
>it is a requirement that any highly usable network should provide automatic
>alternate routing during failures.
>
>

RGR.. That article, (along with some personal experiences) got me "sold"

on the idea of having a "backup system" of some sort along the "main trunk" of a long-haul VHF/UHF network. (ROSE, TexNet, ect.)

Here's my alleged "reasoning"...

Setting up high-speed links will get easier of course, but right now it takes an awful lot of brains, bucks, and organizing to get them flying. That effort is worthwhile, of course, but when hams think about the idea of doing it all over again in parallel it always seems to end up in the " That's nice, maybe we'll do it someday " category.
In my experience, the guys are MUCH more interested in extending the network in new directions and covering new areas than in setting up parallel links over thier existing HS net. - That's human nature.
The larger your HS net grows, the more daunting the prospect of doing it "all over again" without covering new ground becomes. The idea starts to look impractical in HUMAN terms, but that doesn't take away the NEED for a backup system.
Working on the theory that ANY backup is much preferable to none and keeping the above in mind, I've come to the conclusion that in order for the backup link to get going at all, it's going to have to be cheap and easy. Speed will have to take a backseat to easy implimentation, at least for the initial setup of these backup, parallel links.

What could be easier and cheaper than good old 1200 baud, 2-meter stuff which doesn't use seperate "backbone" and "user port" radios as ROSE and TexNet do? To me, this brings NetRom to mind. (I THINK ROSE can work that way too, so why not if that's what you prefer and am trying to back up?) The main thing is to come up with something pretty darned easy and cheap, because if it isn't, nobody is likely to do it at all and you end up with no backup.

(Time flops by...) Once you have your cheap backup system in place, you can start "speeding it up" in selected areas where the backup system seems to come into play most often. Grease the squeaky wheels. Again, this is to keep the cost down, because hams will ALWAYS tend to give covering new territory thier highest priority. (Can't blame them!)

P.S. : In most cases, it will be easiest to use the same tower sites for the backup system as you currently use for your HS trunk. BUT when you can have some of your backup stuff "off to the side" about 30 miles or so, you've just widened the "access footprint" of your High-Speed network. The over-all net ends up being not just tougher, but tougher and FATTER! This could be put forward as a way of satisfying the urge to expand coverage, making the politics of setting up the backup link a litte easier to finagle, perhaps.

Hope I'm not just "talking through my hat" here. From my perspective; The existing TexNet network now (north to south) goes all the way from Missouri to the southern tip of Texas.. That's a good percentage of the route to Chicago, which would give us a HS VHF/UHF net which goes from "border to border". I'm very excited about that prospect, but can see where a parallel system of some description will be needed to give such a long-haul net the reliability and utility we're all looking for.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                          Internet : n5pvl@texoma.com

It's too bad that whole families have to be torn apart
by something as simple as wild dogs.

137. Re: [NETSIG:1530] RE: ACL/digipeating

From: roberts@ses6a.bt.co.uk
Date: Fri, 14 Jul 1995 17:35:03 +0100
To: netsig@tapr.org
Message-ID: <199507141635.LAA30374@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

When I said selective control, it is not selective by callsign.

The funtions operate as follows

* Digipeating VIA the node may be enabled or disabled

* The level 3 netrom routing table (this is an original Net/Rom aspect) selects the port for digipeating - see below

* Additional flags allow the node to refuse to allow uplinks to the node that have been digipeated or to refuse to allow the user to

do a downlink that includes a digi list.

The enable / disable funtions are not selective on the callsign.

If however there is an entry in the nodes's level 3 netrom
table for a station, then the port used for that station is used
for any digipeats sent to that station. Hence if G9BF-15 is in
the L3 list as a neighbour with a route via port 1, then any digi
to that station will go on the RS232 port not the radio port. If
there is no entry, then by default it goes out on the radio.

So, what is the function required ? Is it

"using the standard ACL bar or permit type controls, selectively
bar the digipeating of packets to or from a specified station"

or is it

"as above and also bar it if the next hop is via that station or
from that station (tricky that one)"

or is it

"a bit like above but only take action if it is the next station
in the chain and not the destination or sender of the frame"

or is it

"no change"

It would not matter I assume whether the digi is UI or not - just
bar any of them.

Regards

Dave

Postscript - I just read a follow up message - and would suggest
that the first option listed is the one to be implemented.

138. Re: [NETSIG:1507] Re: AX.25 requirement

From: pipe2@oeonline.com
Date: Fri, 14 Jul 95 12:32 EDT
To: netsig@tapr.org
Message-ID: <m0sWnfQ-000AreC@oeonline.oeonline.com>
Rendered body type: text/plain

<stuff deleted>
>That sure sounds like "opportunity knocking" to me!
>
>Has anyone been working on a "dream protocol" maximized for RF nets?
>
>Don't tell me about old stuff.. I'm asking if there's anything NEW on the
>horizon; Something real "hammy"!

I have been fiddling with a modified token-passing protocol that would be
ideal for backbones. It has zero chance of collision since only the
transmitter with the token can xmit. I have tested the protocol with PIC
microcontrollers on an RS-485 wired net (hey, it's only preliminary testing
;-) at about 9600 baud, and it seems to work. A freind of mine (also a ham)
is going to help build some 2.4 GHz radios so that a small LAN can be set up
using the protocol at 2 Mb/s.

Remember that we now are primary users of two *big* parts of the 2.4 GHz
band which is shared with wireless digital devices (like wireless LANs and
the like). Because of the popularity of wireless datacomm devices on the
consumer market there are now several chip sets to handle 2.4 GHz radio/IF
and QAM data modulation. They will make it much easier for hams to use the
band (all the hard stuff is on the chip! :-)

        -Bill kb8wyp

139. Re: [NETSIG:1530] RE: ACL/digipeating

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 14 Jul 95 09:57:38 PDT
To: netsig@tapr.org
Message-ID: <9507140957.ZM15995@hanko>
Rendered body type: text/plain

On Jul 14, 2:15am, roberts@ses6a.bt.co.uk wrote:
> Subject: [NETSIG:1530] RE: ACL/digipeating
> Do you need digipeating ? Simplest thing is to disable it.
>
> There are controls in the code for enabling / disabling digipeating,
> but not for selective control.
>
> You can also selelectively control digipeat uplinks and downlinks
> to the node.
>
> Is there a need for selective control ? What would you want ?

Remove all of the digipeating code to make room for more
useful functions.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

140. Re: [NETSIG:1536] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 14 Jul 95 12:57:38 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c32@ram.net>
Rendered body type: text/plain

Charles,

Your thinking is on target.

The one major change in wording I have noticed is changing the idea of Backup
System to Alternate Route.

A seperate backup network is much more expensive than adding parallel trunks
to an existing system.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

141. Re: [NETSIG:1537] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 14 Jul 95 13:03:02 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c33@ram.net>
Rendered body type: text/plain

I think they are talking about Digi's FROM a station, not TO...

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

142. Re: [NETSIG:1536] Re: Bulletins vs Mail

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 14 Jul 1995 12:33:58 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507141733.MAA22293@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

According to Charles Brabham:
> >He basically is saying that there must be alternate routes to get between all
> >important locations. (Alternate path == switches in parallel)
> >
> >He also mentions that typical outtages last from days to weeks, since this is
> >just a hobby and people go on vacation...
> >
> >Also I would like to expand that to say that with larger and larger networks
> >it is a requirement that any highly usable network should provide automatic

> >alternate routing during failures.
> >
> >
>
> RGR.. That article, (along with some personal experiences) got me "sold"
> on the idea of having a "backup system" of some sort along the "main trunk"
> of a long-haul VHF/UHF network. (ROSE, TexNet, ect.)

Charles,

If you discuss this with Tom, which I have lots of time, his point is that
we shouldn't be trying to build a national terrestrial RF network . That
these long-haul connections should be provided by commercial connections,
yet to be defined high-speed HF, amateur satellites, or any means possible.
The method of long-haul connection is a matter of personal preference and
what poeple want to do and have access to provide. If a group dispises
wire-line conenctions -- then they have the option not to use them in their
network configuration.

Tom and myself both believe that a lot of our effort should be spent in
improving the local network (local-loop) and thus provide enough connection out
of local area to provide connectivity to what is needed. Connectivity is a
key. One reason we have been working on and off in changing TexNet from
TexNet IP to a TCP/IP based network. (You can read about TexNet IP in the
6th CNC)

As I always state -- packet radio is different in every 50 - 100 mile
radius. So, in your area, a TexNet backbone to Dallas or North to Oklahoma
is probably enough. In Dallas it will probably be multiple Internet sites, RF
links, HF links, and satellite connections to the rest of the 'national'
network -- since Dallas is a hub of activity from your area and other rural
areas.

TexNet can be used as a good example why Tom states we have to have
long-haul carriers. Your area is a prefect example. How many sites have we
tried and lost for various reasons to get the north and south parts of the
network connected. Or when we lose a site due to a lightening strike it
takes X days or X months to get equipment off site repaired and put back in
service (even considering replacement equipment).   For every site you have
to traverse, the chances of a node failure over time increase to the point
where the network is never connected from end-to-end. Pretty simple
concept. TexNet, while many feel it is good, has it problems with hidden
terminals and network failures as any other amateur network in the world.

Mileage spanned by the TexNet network trunks breaks down as follows:

UHF RF amateur radio 9600b fsk	1559 miles	53%
VHF RF amateur radio 1200b afsk	147 miles	5%
donated carrier wireline	1253 miles	42%
network total trunk mileage	2959 miles.	

It takes between 30-60 secs for someone in south texas to communicate with
someone in Little Rock (800 miles away). However, if the network is to
continue to grow, some
type of connection between the far north and far south is going to have to
happen...this long-haul (probably Internet at somepoint) will then cut this
time down to 5 secs or so. which is what people in the middle of the network
see.

Basically, no user should be more than 3 hops from a server that supports the
long-haul connection to the rest of the network.

> Setting up high-speed links will get easier of course, but right now it
> takes an awful lot of brains, bucks, and organizing to get them flying. That
> effort is worthwhile, of course, but when hams think about the idea of doing
> it all over again in parallel it always seems to end up in the " That's
> nice, maybe we'll do it someday " category.

Actually I don't think this is the case. Folks who had the will and wanted
to build high-speed links have done so. While it is true that there is more
equipment becoming available to plug-n-play...there will be those that do
and those that think about doing.

Also, I think you miss the point in what Tom means by duplicate channel.
Long-haul means just that...it gets a long way in one hop as compared to
UHF in many. If we follow Tom's premise of 'this is a hobby' -- then
you will see why Tom and myself both adovcate the use of any means to
provide these long-haul connections. If at some point supporting the

network takes more time than operating on it, then something is wrong.

> Hope I'm not just "talking through my hat" here. From my perspective; The
> existing TexNet network now (north to south) goes all the way from
> Missouri to the southern tip of Texas.. That's a good percentage of the
> route to Chicago, which would give us a HS VHF/UHF net which goes from
> "border to border". I'm very excited about that prospect, but can see where
> a parallel system of some description will be needed to give such a
> long-haul net the reliability and utility we're all looking for.

I think building a RF terrestiral network is an interesting goal, but is not
our effort and energy better spent in trying to have local user acces at
9.6, 19.2, or evern faster and provide the long-haul routes with existing
RF, commcerial links, or whatever it takes to make this all happen.

Building good, workable, high-speed local system is something people can do
without having to enlist the help at a state, regional, or national level.
Then it is a matter of making sure the interconnectivity is well defined to
allow these LANs to inter-communicate. In a sense, we are sectioning the
task in such a manner as to be done on a much wider scale.

Cheers - Greg, WD5IVD

Views expressed here do not represent those of TAPR. Just my twisted own.
:-)

143. Re: [NETSIG:1538] Re: AX.25 requirement

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 14 Jul 1995 14:05:25 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507141406.B1021-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Are there boards or kits available to build up some of these
devices??

I would like to build up a 2.4ghz link using this sort of
system, could use some of these links for cross city links

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---
here in Tamp

144. Re: [NETSIG:1539] RE: ACL/digipeating

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 14 Jul 1995 14:09:10 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507141432.D1021-0100000@gateway.utilpart.com>
Rendered body type: text/plain

You remove the digi code and you will probably end up with
the problem the group in S. FL had with some of the TheNet
code that did not handle digipeaters, they could no longer
talk to the ROSE network since ROSE looks like a digipeat
connect to the node or user.

Not good at interfaces between those two networks.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

145. Re: [NETSIG:1527] Re: Bulletins vs Mail

From: Andrew Funk <kb7uv@panix.com>
Date: Thu, 13 Jul 1995 14:07:41 -0400
To: netsig@tapr.org
Message-ID: <199507141804.OAA05384@panix3.panix.com>
Rendered body type: text/plain

Charles,

Perhaps I am not expressing my thoughts clearly, as you seem to be misunderstanding much of what I have written. And I have gotten a different feeling than you seem to have from others' postings.

As I'm not trying to say that I know better, just that we all should try to respect each others' opinions especially if they have experience to back them up, your statement "So get off your high-horse, and get real" seems to be coming out of right field.

Perhaps I am misreading your messages, but it seems to me that you discount the experiences of others operating in quite different environments than yours.

As I said, "Much of this discussion has been, as I see it, a bit 'out of phase.'"

When I said:

> Your opinions and experience are, of course, helpful. But note that if you are truly "a dumb old appliance operator", as you stated, then you might consider accepting that those who have more experience likely can back-up what they're saying.

I meant exactly that. I was in no way attacking you. However, your reply seems, to me, to be a bit defensive and belligerent.

You further wrote: "You might consider accepting that the EXPERTS don't always know best."

Of course not! I never said they did. However, "experts" are that only because they have demonstrated proficiency in their field whose opinions in their field should at least be respected unless or until shown to be unreliable.

Your statement:

> If ROSE was the only network around, then they'd be carrying tons of BBS traffic, and complain about BBS's being "hidden transmitters" and so on.

indicates to me that you did not understand what I was trying to get across regarding network topology.

Of course locals know from experience what works in their area. But what you said about experts can be applied here as well. Yes, your experiences with multiple networks can help us in this area... and our experience with network topology can assist you in your area.

You said:

> I don't doubt what you say. Nonetheless, why put all your eggs in one basket? What I doubt is the WISDOM of having everything "on top" of ROSE, or any other single network. Diversify, and you won't get caught with your britches down when things start going wrong. They do.

We're likely more in agreement than disagreement here. Yes, diversity helps prevent failures in one network from taking down another. Redundancy within a single network can help prevent failures from being fatal to communications as well.

Perhaps things are different in your area, and each network has an efficient topology with high-speed backbone links between user access points and network resources (BBSs, DX Clusters, etc.). Here things aren't going that way. That's why many of us see an advantage of using a protocol which passes everything transparently as best for an underlying network so more effort can go into efficient topology.

I suspect that if the same total effort and investment put into separate networks were instead devoted to a single network, we'd end up with more total bandwidth than the sum of that of the separate networks -- and with redundancy for critical links.

You wrote:

> IMHO, I'd be very concerned if any ONE NETWORK carried all the traffic.

Again, if the same effort went into a unified network it would likely be able to handle as much or more traffic than the sum of the separate networks...

> Get four separate networks going in YOUR area, set up cross-connections, and you'll start to understand what I mean.. There ARE advantages to keeping your eggs in SEVERAL baskets.

I agree about keeping one's eggs in several baskets! (The same way I feel about planet Earth, but that's another issue!) But where you seem to be advocating separate networks with cross-connections, I'm suggesting consideration of a single underlying network with built-in redundancy to achieve much the same end.

73, Andy

--
_____ Andrew Funk, KB7UV _____
| Tech Producer/Editor Internet: kb7uv@panix.com |
| WCBS-TV Channel 2 News http://www.webcom.com/~arfunk/ |
| New York, NY USA --- INSERT COMMERCIAL HERE --- |

146. DCC Paper Deadline!

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 14 Jul 1995 13:40:11 -0500 (CDT)
To: tapr-bb@tapr.org (TAPR-BB mailing), netsig@tapr.org (NETSIG mailing),
bbssig@tapr.org (BBS SIG mailing), hfsig@tapr.org (HF SIG mailing),
dsp-93@tapr.org (DSP-93 Build), aprssig@tapr.org (BBS SIG mailing),
amsat-bb@amsat.org (AMSAT BB Mail Group)
Message-ID: <199507141840.NAA28968@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Don't forget -- Friday, July 21st! Deadline for ARRL DCC Article Submissions

---

* Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Articles are welcome on any aspect of digital communications.

* Presentation at the Conference is not required for publication.

* Papers are due by July 21, 1995, and should be submitted to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111 or via the Internet to mweinberg@arrl.org

* Please contact Maty for detailed format requirements.

* It is not to late to start writing!

If you think you will be late in submitting your paper(s), contact Maty to arrange details.

14th Annual ARRL Digital Communications Conference
September 8-10th, 1995
Arlington, Texas (minutes from DFW airport)

The ARRL Digital Communications Conference is an international forum for
radio amateurs in digital communications, networking, and related
technologies to meet, publish their work, and present new ideas and
techniques for discussion. Presenters and attendees will have the
opportunity to exchange ideas and learn about recent hardware and
software advances, theories, experimental results, and practical
applications. The Digital Communications Conference is not just for
the digital elite, but for digitally-orientated amateurs of all
levels of experience.

For further information:

E-Mail: TAPR@TAPR.ORG
Web   : http://www.tapr.org/tapr
ftp   : ftp://ftp.tapr.org/tapr/95_DCC_Flyer.pdf

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399 * 817-383-0000

147. [Barry Buelow WA0RJT: Re: [BBSSIG:1228] HF data capacity?]

From: Jtaylor@usacec-osigw.army.mil
Date: Fri, 14 Jul 95 12:18:39 MST
To: netsig@tapr.org
Message-ID: <199507141954.OAA00511@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Apparently the TAPR BBSSIG moderator has little respect for the intelligence
of the BBS ops in the group to provide the input I requested. He's
concerned their responses won't be factual. He suggests this information
would be better gleaned from the HFSIG (Which is working on experimental
protocols, rather than dealing with the day to day reality of forwarding).
Or, that I should order back issues of the ARRL CNC to review....sigh...

I certainly didn't intend to stir up any controversy here, but Greg, I
guess we can kiss the article for the PSR that your requested, goodby!

73 de Jack

----- Forwarded message # 1:

Received: from zeus.ia.net by usacec-osigw.army.mil id aa01678;
          14 Jul 95 18:39 MST
Received: (from barry@localhost) by zeus.ia.net (8.6.10/8.6.9) id OAA16791 for
Jtaylor@usacec-osigw.army.mil; Fri, 14 Jul 1995 14:05:54 -0500
From: Barry Buelow WA0RJT <barry@ia.net>
Message-Id: <199507141905.OAA16791@zeus.ia.net>
Subject: Re: [BBSSIG:1228] HF data capacity?
To: Jtaylor@usacec-osigw.army.mil
Date: Fri, 14 Jul 1995 14:05:53 -0500 (CDT)
In-Reply-To: <199507141708.MAA31109@dingus.n5lyt.datarace.com> from "Jtaylor@usacec-osigw.army.mil" at
Jul 14, 95 12:09:03 pm
X-Mailer: ELM [version 2.4 PL24]
Content-Type: text
Content-Length: 2644

Hi,

I hope you won't be terribly upset, but I'd prefer not to post this
to BBSSIG. The result will be a partially factual answer saying
that this or that scheme is superior.

I would strongly suggest that you send this to HFSIG as they will
provide a much more definitive answer. You should also consider
purchasing the Proceedings from some of the prevoius ARRL DCC
(digital conf). Much good material has been presented by developers
of the various schemes: pactor gtor clover etc.

You should also check the TAPR ftp site: ftp.tapr.org
look at the summmaries of HFSIG or other discussions.

Please let me know if you judge my reply to be inadequate and I'll
try to find you another solid lead.

73 Barry

>
> This message was submitted by Jtaylor@usacec-osigw.army.mil to list
> bbssig@tapr.org. If you forward it back to the list, it will be distributed
> without the paragraphs above the dashed line. You may edit the Subject: line
> and the text of the message before forwarding it back.
>
> If you edit the messages you receive into a digest, you will need to remove
> these paragraphs and the dashed line before mailing the result to the list.
> Finally, if you need more information from the author of this message, you
> should be able to do so by simply replying to this note.
>
> ---------- Message requiring your approval ----------
> Sender: Jtaylor@usacec-osigw.army.mil
> Subject: HF data capacity?
>
> Can anyone on this group provide a reasonable estimate as to how much data
> (in terms of total monthly file size in bytes) can be passed on HF? In
> addition, any comments from forwarders as to whether the present HF
> channel capacity is adequate?
>
> I realize the average amount of data forwarded each month is going to vary
> due to propagation and channel conditions, but would like to get a realistic
> guestimate as to HF channel limitations on 30-40-20 meters.
>
> It would also be useful to quantify the amount of data passed on HF as to
> the type of mode, i.e, Clover, packet or pactor.
>
> What will this information buy us? For starters, it will give us an insight
> into how well the HF resource is presently being utilized as compared to
> the maximum potential of the medium. From this it may be found that slight
> modifications to procedures could improve overall data throughput. Although
> we can probably guess, actual average data totals for each mode could be
> useful in helping forwarding networks to decide on which modem to use. In
> other words, this information will be helpful in better understanding and
> managing the HF medium.
>
> 73 de Jack
>

----- End of forwarded messages

148. Re: [NETSIG:1537] RE: ACL/digipeating

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Fri, 14 Jul 1995 18:12:52 -0300
To: netsig@tapr.org
Message-ID: <199507142112.SAA21612@bud.peinet.pe.ca>
Rendered body type: text/plain

>When I said selective control, it is not selective by callsign.
>
[snip]

>The enable / disable funtions are not selective on the callsign.
>
>
>So, what is the function required ? Is it
>"using the standard ACL bar or permit type controls, selectively
>bar the digipeating of packets to or from a specified station"
>

Yes, my second note clarified that. It appeared that was the case but I just
wanted to ask in case some guru had trick or whatever.
(the original question was if X1J could disable the digipeating of Beacon
packets given a selected callsign.)

Digipeating should always be "avialable' in TheNet. I cant believe there are
people advocating its removal. As a NodeOp I use it for path testing.
BBS use it for Mail Beacons to users, and Users with TPK
or Lan-Link use it for automatic mail pick-up.

Once in awhile its abused, and usually a friendly reminder gets the
user back on track but thats no reason to remove a valuable function.
It may need to be "disabled" in some cases but never removed.

73 - Ron ve1aic

149. Re: [NETSIG:1547] [Barry Buelow WA0RJT: Re: [BBSSIG:1228] HF data capacity?]

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 14 Jul 95 14:13:59 PDT
To: netsig@tapr.org, bbssig@tapr.org
Message-ID: <9507141413.ZM17460@hanko>
Rendered body type: text/plain

On Jul 14, 3:00pm, Jtaylor@usacec-osigw.army.mil wrote:

Speaking as someone interested in all three aspectes of this issue
(BBS capabilities, networking protocols, HF issues) I would hope that
the folks over on bbs_sig would indeed provide such data.

Barry, what say: can we phrase this request in some manner to that
the bbs folks might consult their logs and help with a bit of input
to the networking and HF signalling people?

I don't have access to my own logs, but a rough estimate for CLOVER
is something like this: my system is perhaps 33% utilized. During
that time, I pass all bulletins except @ WW to W5XO in Texas, plus
100 - 200 personal messages a day (outgoing plus incoming) to various
destinations. This is somewhere in the ballpark of 250k bytes per day.
Roughly half of the links use compression, so the actual load on the
ionosphere is perhaps 180k bytes per day. This is done using 500 Hz
bandwidth at the estimated 33% utilization, indicating a potential of
at least .5 MB per day.

Are these the kind of stats you are looking for? If so, can dig through
the logs and provide more accurate numbers.

   ... Hank

> Subject: [NETSIG:1547] [Barry Buelow WA0RJT: Re: [BBSSIG:1228] HF data ca
> Apparently the TAPR BBSSIG moderator has little respect for the intelligence
> of the BBS ops in the group to provide the input I requested. He's
> concerned their responses won't be factual. He suggests this information
> would be better gleaned from the HFSIG (Which is working on experimental
> protocols, rather than dealing with the day to day reality of forwarding).
> Or, that I should order back issues of the ARRL CNC to review....sigh...
>
> I certainly didn't intend to stir up any controversy here, but Greg, I
> guess we can kiss the article for the PSR that your requested, goodby!
>
> 73 de Jack
>
> ----- Forwarded message # 1:
>
> Received: from zeus.ia.net by usacec-osigw.army.mil id aa01678;
>   14 Jul 95 18:39 MST
> Received: (from barry@localhost) by zeus.ia.net (8.6.10/8.6.9) id OAA16791
for Jtaylor@usacec-osigw.army.mil; Fri, 14 Jul 1995 14:05:54 -0500
> From: Barry Buelow WA0RJT <barry@ia.net>
> Message-Id: <199507141905.OAA16791@zeus.ia.net>
> Subject: Re: [BBSSIG:1228] HF data capacity?
> To: Jtaylor@usacec-osigw.army.mil
> Date: Fri, 14 Jul 1995 14:05:53 -0500 (CDT)
> In-Reply-To: <199507141708.MAA31109@dingus.n5lyt.datarace.com> from
"Jtaylor@usacec-osigw.army.mil" at Jul 14, 95 12:09:03 pm
> X-Mailer: ELM [version 2.4 PL24]
> Content-Type: text
> Content-Length: 2644
>
> Hi,
>
> I hope you won't be terribly upset, but I'd prefer not to post this
> to BBSSIG. The result will be a partially factual answer saying
> that this or that scheme is superior.
>
> I would strongly suggest that you send this to HFSIG as they will
> provide a much more definitive answer. You should also consider
> purchasing the Proceedings from some of the prevoius ARRL DCC
> (digital conf). Much good material has been presented by developers
> of the various schemes: pactor gtor clover etc.
>
> You should also check the TAPR ftp site: ftp.tapr.org
> look at the summmaries of HFSIG or other discussions.
>

> Please let me know if you judge my reply to be inadequate and I'll
> try to find you another solid lead.
>
> 73 Barry
>
> >
> > This message was submitted by Jtaylor@usacec-osigw.army.mil to list
> > bbssig@tapr.org. If you forward it back to the list, it will be distributed
> > without the paragraphs above the dashed line. You may edit the Subject:
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> >
> > If you edit the messages you receive into a digest, you will need to remove
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> > Finally, if you need more information from the author of this message, you
> > should be able to do so by simply replying to this note.
> >
> > ---------------------- Message requiring your approval

> > Sender: Jtaylor@usacec-osigw.army.mil
> > Subject: HF data capacity?
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> > modifications to procedures could improve overall data throughput.
 Although
> > we can probably guess, actual average data totals for each mode could be
> > useful in helping forwarding networks to decide on which modem to use. In
> > other words, this information will be helpful in better understanding and
> > managing the HF medium.
> >
> > 73 de Jack
> >
>
>
> ----- End of forwarded messages
>-- End of excerpt from Jtaylor@usacec-osigw.army.mil

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

150. Re: [NETSIG:1535] Re: ACL/digipeating

From: shawnpat@sierra.net (Shawn Skinner)
Date: Thu, 13 Jul 1995 22:32:06 -0700
To: netsig@tapr.org
Message-ID: <199507142234.AA16901@diamond.sierra.net>
Rendered body type: text/plain

>>>I would like to know if anyone has found a way to restrict beaconing of
>>>selected callsigns on X1J?

>As I said, I'm looking for a technical answer not a Political one, as most
>have been
>tried without success.
>
>73 - Ron ve1aic
>

Well Ron, I quess that I am sorry to hear that you have a problem
similar to what N7OO (Jack Taylor) had at the time that TN208 was
released. I guess that there will allways be the die-hards who
must misuse the equipment that doesn't belong to them.

Please don't republish the above, as Jack would not want it published
to the general world.

Also, to be clear, I am not against lockouts of those who don't follow
the FCC rules, but that leaves open a large area in digital where
a smart operator can cause murder.

Perhaps a patch could be generated by the X1J author?
robert@ses.., I saw his response to this on the sig.

Sorry for no help.
73 de Shawn, N7XBM.

shawnpat@sierra.net Shawn Skinner

151. Equipment for microwave

From: willi_r@mail.uwlax.edu
Date: Fri, 14 Jul 95 19:01:53 -0500
To: netsig@tapr.org
Message-ID: <9507150001.AA10352@mail.uwlax.edu>
Rendered body type: text/plain

If it is true that Gunnplexers can not be used for a practical link at 10
Gig,(at least in severe climates like we have in Wisconsin), then anyone
have suggestions for any other off the shelf equipment for this frequency
and other microwave ham bands?

Otherwise, it would seem that the next most practical setup would be the 56k
speed with the DSY modem and transverters, but the equipment cost goes way
up. But you probably can use omnidirectional paths and put everyone on a
CSMA approach.

Rick, KV9U

152. Re: [NETSIG:1551] Equipment for microwave

From: Jtaylor@usacec-osigw.army.mil
Date: Fri, 14 Jul 95 17:38:28 MST
To: netsig@tapr.org
Message-ID: <199507150105.UAA04728@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

I too was concerned about the temperature stability of gunnplexers and
discussed this with n6gn. He suggested if both gunnplexer terminals were
exposed to the same climate, temperature drift might not be a problem
since both units would tend to drift at the same rate.

73 de Jack

153. Re: [NETSIG:1550] Re: ACL/digipeating

From: shawnpat@sierra.net (Shawn Skinner)
Date: Fri, 14 Jul 1995 02:42:15 -0700
To: netsig@tapr.org
Message-ID: <199507150244.AA00311@diamond.sierra.net>
Rendered body type: text/plain

>
>Please don't republish the above, as Jack would not want it published
>to the general world.
>

Public appology to Jack N7OO.

I messed up on the addressing of the post and this was intended
to be direct E-mail.

Looks like my week for crow.

Signed; Very Red Faced.
shawnpat@sierra.net Shawn Skinner

154. Re: [NETSIG:1552] Re: Equipment for microwave

From: willi_r@mail.uwlax.edu
Date: Sat, 15 Jul 95 12:26:07 -0500

To: netsig@tapr.org
Message-ID: <9507151726.AA01618@mail.uwlax.edu>
Rendered body type: text/plain

Jack Taylor had pointed out that:

>I too was concerned about the temperature stability of gunnplexers and
>discussed this with n6gn. He suggested if both gunnplexer terminals were
>exposed to the same climate, temperature drift might not be a problem
>since both units would tend to drift at the same rate.

Anybody else have any actual experience with using Gunnplexers in highly
variable temperature environments?

Rick, KV9U

155. Re: microwave

From: KN6UO@aol.com
Date: Sat, 15 Jul 1995 14:15:38 -0400
To: netsig@tapr.org
Message-ID: <950715141537_115532468@aol.com>
Rendered body type: text/plain

>I too was concerned about the temperature stability of gunnplexers and
>discussed this with n6gn. He suggested if both gunnplexer terminals were
>exposed to the same climate, temperature drift might not be a problem
>since both units would tend to drift at the same rate.

>73 de Jack

I looked at the situation in the same way also. It seems like it would work
especially if you use a design that has some frequency drift compensation.
 But if you include sharp filters to allow syncronus data flow, which I feel
is the way to go on 10 GHz, then you can easily drift out of the filters
range.

Kevin

156. Re: [NETSIG:1539] RE: ACL/digipeating

From: n5pvl@texoma.com (Charles Brabham)
Date: Sat, 15 Jul 1995 23:00:39 -0500
To: netsig@tapr.org
Message-ID: <199507160400.XAA04447@ns1.texoma.com>
Rendered body type: text/plain

>Remove all of the digipeating code to make room for more
>useful functions.
>
>   ... Hank
>

That sounds like an excellent idea to me, Hank! In this day and age,
digipeating really is a terrible waste of EPROM space.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

They said it was a miracle.. Saint Francis suddenly materialized and knocked
one clean over the outfield fence.
I think it was just a lucky swing.

157. Re: [NETSIG:1545] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Sat, 15 Jul 1995 23:00:41 -0500
To: netsig@tapr.org
Message-ID: <199507160400.XAA04450@ns1.texoma.com>
Rendered body type: text/plain

>Charles,
>
>Perhaps I am not expressing my thoughts clearly, as you seem to be
>misunderstanding much of what I have written. And I have gotten a different
>feeling than you seem to have from others' postings.
>
>As I'm not trying to say that I know better, just that we all should try to
>respect each others' opinions especially if they have experience to back
>them up, your statement "So get off your high-horse, and get real" seems to
>be coming out of right field.

>
>Perhaps I am misreading your messages, but it seems to me that you discount
>the experiences of others operating in quite different environments than yours.
>

Not at all! Mostly I am looking for clarification, and commenting on
STATEMENTS which don't seem to jibe with my limited experience. When this
occurs, I have to figure the other guy's either wrong or not giving enough
info to make the statement clear. In either case, questioning the statement
(as given) is my best bet.

>   Your opinions and experience are, of course, helpful. But note that if you
>   are truly "a dumb old appliance operator", as you stated, then you might
>   consider accepting that those who have more experience likely can back-up
>   what they're saying.
>
>I meant exactly that. I was in no way attacking you. However, your reply
>seems, to me, to be a bit defensive and belligerent.
>
I almost always sound belligerent, even when in complete or almost complete
agreement. It's called "an unfortunate tone", and worse...

I have heard similar statements many times from folks who WERE trying to
imply that I should "shut up and respect my betters". Of course they were
often right, but not always. In any case, I never accept as a given any
statement which I find to be unclear, or which doesn't reflect my experience
to that point..
I go by the old saw " Any scientist who can't explain what he's doing to a
six year-old child probably is not too sure about it, himself."

That's part of why I sound so much like a redneck, speaking on such basic
terms. I'm very seldom misunderstood, (though often disagreed with!) and
I enjoy the challenge of taking complicated issues and reducing them to the
basics, as an aid to communication and understanding..
This has literally allowed me to explain complex processes to even the
proverbial six year-old child. I find that the jargon which we have
developed in order to nail down the many details of what we do often gets in
the way of understanding the basic processes those details relate to.

>You further wrote: "You might consider accepting that the EXPERTS don't
>always know best."
>
>Of course not! I never said they did. However, "experts" are that only
>because they have demonstrated proficiency in their field whose opinions in
>their field should at least be respected unless or until shown to be
>unreliable.
>

Naw! I NEVER assume an expert knows what he's doing, or talking about. I
know too many experts to go for that! I've found that if you assume an
expert is probably right, you've just short-circuited your ability to
contribute to what he's doing, or get him to thinking along new lines. If
you don't question statements which don't sound right, you'll never get the
chance to have them clarified so you can better judge them.
>Your statement:
>
>   If ROSE was the only network around, then they'd be carrying tons of BBS
>   traffic, and complain about BBS's being "hidden transmitters" and so on.
>
>indicates to me that you did not understand what I was trying to get across
>regarding network topology.
>
Keep it simple.. What were you trying to say?

>Of course locals know from experience what works in their area. But what you
>said about experts can be applied here as well. Yes, your experiences with
>multiple networks can help us in this area... and our experience with
>network topology can assist you in your area.
>
>You said:
>
>   I don't doubt what you say. Nonetheless, why put all your eggs in one
>   basket? What I doubt is the WISDOM of having everything "on top" of ROSE,
>   or any other single network. Diversify, and you won't get caught with
>   your britches down when things start going wrong. They do.
>
>We're likely more in agreement than disagreement here. Yes, diversity helps
>prevent failures in one network from taking down another. Redundancy within
>a single network can help prevent failures from being fatal to

>communications as well.

Well, it gives you an alternate way to communicate after the lightning strike.

I guess I prefer the idea of diversifying because it provides "niches" for a
wider variety of preferences and peculiarities. Hams have so MANY of those!
There's less friction, because dissimilar "textures" of these don't end up
"rubbing together" so much.
If a ham thinks (a bizzare example, but not beyond possibility!) that 1200
baud NetRom is the best thing since sliced bread and that all else is
vanity, his ego can go on unchecked and he'll not only be much happier in
his "niche", but be less of a pain to those who think differently.
Everybody's happier!   :-)

>Perhaps things are different in your area, and each network has an efficient
>topology with high-speed backbone links between user access points and
>network resources (BBSs, DX Clusters, etc.). Here things aren't going that
>way. That's why many of us see an advantage of using a protocol which passes
>everything transparently as best for an underlying network so more effort
>can go into efficient topology.
>
>I suspect that if the same total effort and investment put into separate
>networks were instead devoted to a single network, we'd end up with more
>total bandwidth than the sum of that of the separate networks -- and with
>redundancy for critical links.
>
>You wrote:
>
>   IMHO, I'd be very concerned if any ONE NETWORK carried all the traffic.
>
>
>Again, if the same effort went into a unified network it would likely be
>able to handle as much or more traffic than the sum of the separate networks...
>

I'm not sure about that.. Let's say your running at 9600 bd, with ALL local
traffic going over your single net.
Compare that to several nets, at varying bd rates.. Two at 9600, and two at
1200. AND each of those is more lightly loaded, since they only handle part
of the total load.

>   Get four separate networks going in YOUR area, set up
cross-connections, >and
>   you'll start to understand what I mean.. There ARE advantages to keeping
>   your eggs in SEVERAL baskets.
>
>I agree about keeping one's eggs in several baskets! (The same way I feel
>about planet Earth, but that's another issue!) But where you seem to be
>advocating separate networks with cross-connections, I'm suggesting
>consideration of a single underlying network with built-in redundancy to
>achieve much the same end.
>

Apples and Oranges.. Fords and Chevy's.. Yamahas and Harleys.

I think they oughta quit fooling around and start working on space habitats,
by the way.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

They said it was a miracle.. Saint Francis suddenly materialized and knocked
one clean over the outfield fence.
I think it was just a lucky swing.

158. Re: [NETSIG:1542] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Sat, 15 Jul 1995 23:00:31 -0500
To: netsig@tapr.org
Message-ID: <199507160400.XAA04444@ns1.texoma.com>
Rendered body type: text/plain

>According to Greg Jones...

>Charles,
>
>If you discuss this with Tom, which I have lots of time, his point is that
>we shouldn't be trying to build a national terrestrial RF network . That

>these long-haul connections should be provided by commercial connections,
>yet to be defined high-speed HF, amateur satellites, or any means possible.
>The method of long-haul connection is a matter of personal preference and
>what poeple want to do and have access to provide. If a group dispises
>wire-line conenctions -- then they have the option not to use them in their
>network configuration.
>
I don't see much room for personal preference, or options in what you and
Tom suggest.

High-speed HF doesn't exist and won't in the foreseeable future, amateur
satellite is severly restricted by AMSAT itself, "any means possible" is
pretty nebulous, and that leaves us with - commercial connections.

That's the only practical way I can see to do what you and Tom suggest. Be
sure and correct me if I'm wrong!

It's important to be straightforward and realistic in these discussions. Why
not just come out and say --

" Tom and I think packet radio should be reduced to being a series of
high-speed local feeds to commercial communication services."

Doesn't that cover your position much more accurately? It won't go over as
well with ham radio operators, but at least by saying that you won't be
insulting anyone's intelligence.

I still think the terrestrial links are a lot better idea for a variety of
reasons, and a lot more in line with the basic stated purpose of ham radio.

>Tom and myself both believe that a lot of our effort should be spent in
>improving the local network (local-loop) and thus provide enough connection out
>of local area to provide connectivity to what is needed. Connectivity is a
>key. One reason we have been working on and off in changing TexNet from
>TexNet IP to a TCP/IP based network. (You can read about TexNet IP in the
>6th CNC)
>

I'm aware that reducing packet radio to a series of local feeds to Internet
is part and parcel to the "vision" of TCP/IP for packet radio. A lot of
other hams are becoming aware of this as well.

TexNet hasn't been transformed over to IP for two reasons:

1. Technical difficulties not yet addressed.

2. The outraged uprising among the great majority of Texas packet ops which
would result in either new leadership for TPRS, or a dead TPRS before it
could be fully implemented. In any case, be sure to include losing MOST of
TPRS's current membership in your plans, if this is forced on Texas hams.

The great majority of packet ops simply don't like TCP/IP. I'll be glad to
expand on this, and explain why if you doubt what I'm saying.

>As I always state -- packet radio is different in every 50 - 100 mile
>radius. So, in your area, a TexNet backbone to Dallas or North to Oklahoma
>is probably enough. In Dallas it will probably be multiple Internet sites, RF
>links, HF links, and satellite connections to the rest of the 'national'
>network -- since Dallas is a hub of activity from your area and other rural
>areas.
>
I'd like to see it go off to the west too.. More on that later.

>TexNet can be used as a good example why Tom states we have to have
>long-haul carriers. Your area is a prefect example. How many sites have we
>tried and lost for various reasons to get the north and south parts of the
>network connected. Or when we lose a site due to a lightening strike it
>takes X days or X months to get equipment off site repaired and put back in
>service (even considering replacement equipment).   For every site you have
>to traverse, the chances of a node failure over time increase to the point
>where the network is never connected from end-to-end. Pretty simple
>concept. TexNet, while many feel it is good, has it problems with hidden
>terminals and network failures as any other amateur network in the world.
>

I see the above as a good example of why we have to build backup-links (
Even cheap, 1200 bd NetRom stuff) for ANY large high-speed terrestrial network.

I don't find it a compelling arguement for deciding that RF just won't work

for ham radio.

>Mileage spanned by the TexNet network trunks breaks down as follows:
>
>   UHF RF amateur radio 9600b fsk   1559 miles   53%
>   VHF RF amateur radio 1200b afsk   147 miles   5%
>   donated carrier wireline   1253 miles   42%
>
>   network total trunk mileage   2959 miles.
>

An intersting experiment:

Take a map with the TexNet network on it, and use a blue highlighter to mark
a 60 mile-wide swath along the RF links on TexNet. Use a yellow marker to do
the same over the wireline sections. (30 miles on each side of the lines,
since RF nodes average a 60 mile seperation.)
Now, do some checking around to see roughly how many new packet operators
have appeared in the last few years in the two colored areas.. Compare results..

If this seems like an unfair comparasin since the wirelines go over areas of
lower population, keep the following in mind...
Wirelines generate NO new hams in areas they traverse, no matter how many
people get passed over. Zero is still zero between the "in" and "out" points.
Using wirelines to cover LONGER distances only means you'll pass by MORE
potential hams and packet ops.

The SHERMAN TexNet node, for example, wasn't installed to answer a crying
need for it by hams in the Sherman/Denison area. There simply weren't very
many packet ops here at all, at the time it was installed. SHERMAN was
primarily installed to bridge over a packet "black hole", in order to
connect TexNet with HogNet.
This RF link has, since being installed, generated a LARGE number of new
packet ops and hams in the Sher/Den area. In fact, more than half of the
current population of packet ops in the area got into packet during the last
two years.
A goodly sized percentage of these new packet ops are also new hams.
If TexNet had traversed the "black hole" with a wireline, the Sher/Den
packet radio population never would have come to life as it has, mainly
because SHERMAN node wouldn't have been required to do that. The wire link
most likely would have gone directly to OK City from Dallas. (In accordance
with your and Tom's ideas.)

That's all I need to know, to develop a strong preference for terrestrial RF
networks over wireline links. (Even if you ignore the fact that wire-lines
simply are NOT ham radio.)

THIS is why I would like to see TexNet go west from my location.. Several
towns full of guys who don't know they are intersested in packet radio yet,
and a HIGH-SPEED RF alternative route into Oklahoma, up Hwy 35.

>It takes between 30-60 secs for someone in south texas to communicate with
>someone in Little Rock (800 miles away). However, if the network is to
>continue to grow, some
>type of connection between the far north and far south is going to have to
>happen...this long-haul (probably Internet at somepoint) will then cut this
>time down to 5 secs or so. which is what people in the middle of the network
>see.
>

I doubt seriously if the NETWORK will fail to grow if speeds don't increase
beyond the capabilities of RF links.. The "speed problem" and lack of rapid
end-to-end connectivity is only a problem if you intend to go over to
TCP/IP.. A good arguement for NOT going over to TCP/IP, in my opinion.
The current store 'n forward messaging system has ENJOYED the speed
increases which TexNet has made possible, and the HF forwarding net has
enjoyed the reduction on it's load. The hams who live along these
terrestrial RF paths have ENJOYED the packet access these RF links have made
possible.

There's a whole lot out there besides TCP/IP, Greg. Those people deserve our
consideration too, and a lot of people out there who haven't discovered that
they are interested in packet radio yet.

"Wireline" doesn't address this very well, if at all. It only promises to
spread the hobby in areas where it already exists.

>Basically, no user should be more than 3 hops from a server that supports the
>long-haul connection to the rest of the network.

>
>> Setting up high-speed links will get easier of course, but right now it
>> takes an awful lot of brains, bucks, and organizing to get them flying. That
>> effort is worthwhile, of course, but when hams think about the idea of doing
>> it all over again in parallel it always seems to end up in the " That's
>> nice, maybe we'll do it someday " category.
>
>Actually I don't think this is the case. Folks who had the will and wanted
>to build high-speed links have done so. While it is true that there is more
>equipment becoming available to plug-n-play...there will be those that do
>and those that think about doing.
>
My comments were related to the issue of building BACKUP links to provide
some redundancy and increased reliability for EXISTING high-speed
terrestrial networks, not to building the networks in the first place.
I think we are BOTH right, but talking about different things there.

>Also, I think you miss the point in what Tom means by duplicate channel.
>Long-haul means just that...it gets a long way in one hop as compared to
>UHF in many. If we follow Tom's premise of 'this is a hobby' -- then
>you will see why Tom and myself both adovcate the use of any means to
>provide these long-haul connections. If at some point supporting the
>network takes more time than operating on it, then something is wrong.
>

There is currently no way to provide the speed and reliability needed for
these high-speed, Long-Haul point-to-point links with RF, and none in the
forseeable future.
There is also no NEED for these links unless you're planning on using TCP/IP.

Again, this points out TCP/IP's fundamental unsuitability for HAM RADIO
applications over any appreciable distance. You can't do it properly with
radios!
Store 'n Forward messaging may be slow, but has been proven to work well
with radios, even over long distances. This makes the messaging system we
have MUCH more advanced than TCP/IP, AS A HAM RADIO APPLICATION.

UHF in many hops is VERY adequate for Ham appplications such as the store
and forward messaging system which hams currently use. With the addition of
suitable (cheap) backup links, UHF in many hops will do it much BETTER
than it currently does, and this is something which can be done with RF.

I agree with the premise that "this is a hobby".. Where I differ, is in that
I have no confusion as to WHICH hobby it is.. It's Ham RADIO.

>> Hope I'm not just "talking through my hat" here. From my perspective; The
>> existing TexNet network now (north to south) goes all the way from
>> Missouri to the southern tip of Texas.. That's a good percentage of the
>> route to Chicago, which would give us a HS VHF/UHF net which goes from
>> "border to border". I'm very excited about that prospect, but can see where
>> a parallel system of some description will be needed to give such a
>> long-haul net the reliability and utility we're all looking for.
>
>I think building a RF terrestiral network is an interesting goal, but is not
>our effort and energy better spent in trying to have local user acces at
>9.6, 19.2, or evern faster and provide the long-haul routes with existing
>RF, commcerial links, or whatever it takes to make this all happen.
>

No, I think it's silly to hook up a fire hose up to a soda straw, which is
what this would amount to if you limit yourself to RF links. This is why
TexNet has a 9600 bd "backbone", and only 1200 bd user access.

Why limit yourself to RF links?

Because doing otherwise is contrary to the basic stated purpose of ham radio.
It does nothing to advance the hobby, and if hams develop a heavy dependence
on commercial carriers for thier Long Haul communications as you and Tom
would have us do, hams will look pretty silly next time Congress and the FCC
have these same commercial carriers knocking at thier door, looking for
spectrum to grab and waving megabucks around..
In other words, the practice could VERY EASILY lose us some of the "freebie"
spectrum we've been enjoying. Others will be GLAD to pay for it, and that
fact in itself is already cause enough for concern without hams making the
situation worse by damaging thier own reputations in the eyes of Congress
and the FCC.
>Building good, workable, high-speed local system is something people can do
>without having to enlist the help at a state, regional, or national level.
>Then it is a matter of making sure the interconnectivity is well defined to

>allow these LANs to inter-communicate. In a sense, we are sectioning the
>task in such a manner as to be done on a much wider scale.
>

I don't see anything terrible about hams becoming involved on a widespread
level. That's part of the hobby's purpose, after all. I have met a number of
really decent hams BECAUSE of the current State-to-State gathering of
resources needed to pursue the TexNet/HogNet connection. This process, when
viewed in a more generalized fashion, accounts for people from different
regions, states, and countries WORKING TOGETHER when otherwise they may
never have even become aquainted. This is the fellowship, good will, and
"breaking of distance barriers" which ham radio is supposed to exist (in
part) to promote.

The interconnectivity you mention can only be "well defined" enough to do
what you two guys suggest, by throwing our hands up and abandoning RF for
the bulk of our communications.

No, thank you! I'll just stick to Ham Radio, and ALL the purposes for which
it exists. Warts and all, I prefer doing what CAN be done with RF.

Tom's observations about reliability over long terrestrial packet networks
points out a CHALLENGE we face as ham radio operators. To me, it says," This
is what hams need to think about, and find a way to overcome with the tools
which Ham RADIO puts at thier disposal."

When hams do this, they advance the art. That's part of what hams are here for.

Wirelines are a crutch which hams can and should try thier best to do without.
As ham radio operators, we oughta stand up on our hind legs, toss our
crutch, and be PROUD of what we CAN accomplish with RF.

That's just me though. I don't see the limitations and challenges of using
radios as a drawback for hams. I see them as the root cause of the advances
we have made, and of our progress in the future.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

They said it was a miracle.. Saint Francis suddenly materialized and knocked
one clean over the outfield fence.
I think it was just a lucky swing.

159. Re: [NETSIG:1555] Re: microwave

From: tmoulton@ram.net (Tom Moulton)
Date: Sun, 16 Jul 95 08:18:29 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c36@ram.net>
Rendered body type: text/plain

>>I too was concerned about the temperature stability of gunnplexers and
>>discussed this with n6gn. He suggested if both gunnplexer terminals were
>>exposed to the same climate, temperature drift might not be a problem
>>since both units would tend to drift at the same rate.
>
>>73 de Jack
>
>I looked at the situation in the same way also. It seems like it would work
>
>especially if you use a design that has some frequency drift compensation.
> But if you include sharp filters to allow syncronus data flow, which I feel
>is the way to go on 10 GHz, then you can easily drift out of the filters
>range.
>
>Kevin

But won't the RX stay locked to the other TX while it drifts?

I think the net result is that both directions stay locked, but they could be
on very different frequencies...

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

160. Re: [NETSIG:1556] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Sun, 16 Jul 95 08:42:20 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c37@ram.net>
Rendered body type: text/plain

>>Remove all of the digipeating code to make room for more
>>useful functions.
>>
>>   ... Hank
>>
>
>That sounds like an excellent idea to me, Hank! In this day and age,
>digipeating really is a terrible waste of EPROM space.
>
>
>73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Hold on thar missy!

Before we start deleting support for digipeater fields we need to understand
something about ROSE.

Since ROSE was designed to use the AX.25 Repeater Addresses for specifing the
Network addresses ROSE uses and Requires Digipeater fields.

This allows ROSE to get all the information it needs in the Connect Request
and also lets ROSE be 100% transparent to user data, ie no network level
commands hidden in the data.

So while Digipeating may not be required, the digipeater fields do need to be
supported to allow connecting through ROSE networks.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

161. Networks real and imagined

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 16 Jul 1995 06:55:51 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950716065359.2853A-100000@acca>
Rendered body type: text/plain

---------- Forwarded message ----------
Date: Sun, 16 Jul 1995 06:52:15 -0600
From: Mail Delivery Subsystem <Mailer-Daemon@acca.nmsu.edu>
To: k5di@acca.nmsu.edu
Subject: Returned mail: User unknown

The original message was received at Sun, 16 Jul 1995 06:52:13 -0600
from k5di@localhost

   ----- The following addresses had delivery problems -----
cnetsig@tapr.org (unrecoverable error)

   ----- Transcript of session follows -----
... while talking to dingus.n5lyt.datarace.com.:
>>> RCPT To:<cnetsig@tapr.org>
<<< 550 <cnetsig@tapr.org>... User unknown
550 cnetsig@tapr.org... User unknown

   ----- Original message follows -----
Return-Path: <k5di@acca.nmsu.edu>
Received: by acca.nmsu.edu (8.6.12/acca-1.0)
        id GAA03982; Sun, 16 Jul 1995 06:52:13 -0600
Date: Sun, 16 Jul 1995 06:52:13 -0600 (MDT)
From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
To: cnetsig@tapr.org
Subject: Re: [NETSIG:1558] Re: Bulletins vs Mail
In-Reply-To: <199507160400.XAA04444@ns1.texoma.com>
Message-ID: <Pine.SUN.3.91.950716060328.1784B-100000@acca>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

        Charles this message of yours is too long. I didn't read it
because I know what it says. TCP/IP is the bane of the network person.
Spoken like a person who has tried NOS but never got it up and running

well. Or a person who can't find another NOS ham to talk to.

On Sun, 16 Jul 1995, Charles Brabham wrote:

> >According to Greg Jones...
>
> >Charles,
> >
> >If you discuss this with Tom, which I have lots of time, his point is that
> >we shouldn't be trying to build a national terrestrial RF network . That
> >these long-haul connections should be provided by commercial connections,
> >yet to be defined high-speed HF, amateur satellites, or any means possible.
> There is currently no way to provide the speed and reliability needed for
> these high-speed, Long-Haul point-to-point links with RF, and none in the
> forseeable future.
> There is also no NEED for these links unless you're planning on using TCP/IP.
>
> Again, this points out TCP/IP's fundamental unsuitability for HAM RADIO
> applications over any appreciable distance. You can't do it properly with
> radios!
> Store 'n Forward messaging may be slow, but has been proven to work well
> with radios, even over long distances. This makes the messaging system we
> have MUCH more advanced than TCP/IP, AS A HAM RADIO APPLICATION.
>

Charles, there are hams using NOS, the TCP/IP software to send messages to the Store and forward Packet BBS system. But your right, the IP router is an end-to-end device and you must have a usable communications path between them.

The Packet BBS network was a working national network of limited capability before the internet became such a vital link in the network. I recall that mail was pretty fast to the west coast from NM but a lot slower going east. Problem is there is no VHF path from NM to Texas. And Texas is large...:)

> UHF in many hops is VERY adequate for Ham appplications such as the store
> and forward messaging system which hams currently use. With the addition of
> suitable (cheap) backup links, UHF in many hops will do it much BETTER
> than it currently does, and this is something which can be done with RF.
>

Well yes and no. Many hops means the 1200 baud nodes are sending data at 100 baud effective. This is TYPICAL! And someone needs to live near where the nodes are and keep them fixed.

For example, El Paso and Midland Texas are 200 miles apart. It will take about 4 nodes to connect the 2 places. Trouble is...no hams live between El Paso and Midland. No one there to put up a node or fix same. For a year, a ham from Midland put up nodes all over the place! We had a route to Midland but it was poor. Used it some but then the node ham got mad and took them down...

> Tom's observations about reliability over long terrestrial packet networks
> points out a CHALLENGE we face as ham radio operators. To me, it says," This
> is what hams need to think about, and find a way to overcome with the tools
> which Ham RADIO puts at thier disposal."
>
> When hams do this, they advance the art. That's part of what hams are here for.

Not really Charles, they make the long haul with 300 baud HF packet radio. This works because a very few hams with good radios and antenna's can pass the mail a long distance. Reliability is a problem. The band conditions do mess up things. But this did work and work well, and still does. But it in no way advanced the art.

>
> Wirelines are a crutch which hams can and should try thier best to do without.
> As ham radio operators, we oughta stand up on our hind legs, toss our
> crutch, and be PROUD of what we CAN accomplish with RF.
>

Tom has been working the network issue for years! And Tom can see

that there are just not a viable way to cover the whole USA with VHF/UHF nodes. It is silly to talk about doing it. I have been doing it too and see that we have dond good in the local areas. Cities have more or less good radio networks within them.

Getting from city to city is the problem. We in Las Cruces, NM solved getting from El Paso to Midland. I forward via the ham internet gateway system to Remi F6CNB in Sugarland. It's fast, and uses radio at both ends. And it uses TCP/IP at both ends. And it uses the telephone company over 99% of the trip.

Why don't I use HF? The internet is easier and free!

> That's just me though. I don't see the limitations and challenges of using
> radios as a drawback for hams. I see them as the root cause of the advances
> we have made, and of our progress in the future.
>

Problem is we haven't done anything that can be called "advances" with radios. The radios we use are old commercial radios thrown away by the railroads.

I see future progress being made by the HF hams. If they can get busy and set up a real network, not just what happened to exist, and try 1200 baud on 20 meters, and 30 meters too, they might be a viable alternative to the internet (telephone company).

```
 ******************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                            *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet       *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12      *
 *                                                                            *
 *        Electrical Engineer with the Army Research Laboratory               *
 *                                                                            *
 ******************************************************************************
```

162. Re: [NETSIG:1560] RE: ACL/digipeating

From: Jack Swift <jswift@garnet.msen.com>
Date: Sun, 16 Jul 1995 10:46:48 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.BSI.3.91.950716104128.2232A-100000@garnet.msen.com>
Rendered body type: text/plain

as part of the thread, Hank suggested:

> >>Remove all of the digipeating code to make room for more
> >>useful functions.

Doing this would hurt the operation of the APRS 'system' since it uses UI frames digipeated to disseminate the position data between multiple stations in somewhat of a conference mode.

If there was an alternative which would use less code than the digipeat code.............

```
------------------------------------------------------------------------------
Jack Swift             jswift@msen.com            N8WAV@W8YY.#UPMI.MI.USA.NOAM
Swift True Value Hardware                  402 Shelden Ave. Houghton, MI 49931
Houghton County Amateur Radio Emergency Service     APO Epsilon Lambda Advisor
906-482-0530, 0531, 7766      Dereliction IS!     Having fun is Hamming it up!
Marriage is an Institution - Only a Psychologist should be able to commit you.
^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
```

163. Re: [NETSIG:1558] Re: Bulletins vs Mail

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Sun, 16 Jul 1995 10:56:25 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950716105221.187A-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Sun, 16 Jul 1995, Charles Brabham wrote:

> That's [new packeteers brought on by new RF nodes - hg] all I need to know,

> to develop a strong preference for terrestrial RF
> networks over wireline links. (Even if you ignore the fact that wire-lines
> simply are NOT ham radio.)

Would it be fair to say Charles that you prefer having no connectivity to
having some connectivity with carriage by commercial means?

Howie

--
Howard Goldstein hg@n2wx.ampr.org
N2WX http://www.tapr.org/~n2wx/

164. Re: [NETSIG:1560] RE: ACL/digipeating

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 16 Jul 1995 12:04:17 -0500
To: netsig@tapr.org
Message-ID: <199507161704.MAA08706@ns1.texoma.com>
Rendered body type: text/plain

>>>Remove all of the digipeating code to make room for more
>>>useful functions.
>>>
>>> ... Hank
>>>
>>
>>That sounds like an excellent idea to me, Hank! In this day and age,
>>digipeating really is a terrible waste of EPROM space.
>>
>>
>>73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>
>Hold on thar missy!
>
>Before we start deleting support for digipeater fields we need to understand
>something about ROSE.
>
>Since ROSE was designed to use the AX.25 Repeater Addresses for specifing the
>Network addresses ROSE uses and Requires Digipeater fields.
>
>This allows ROSE to get all the information it needs in the Connect Request
>and also lets ROSE be 100% transparent to user data, ie no network level
>commands hidden in the data.
>
>So while Digipeating may not be required, the digipeater fields do need to be
>supported to allow connecting through ROSE networks.
>
>
>

Sorry, Tom! I publicly retract any enthusiasm for removing digipeating from
node code! For this reason, and the APRS as well.

I was wrong. Sorry about that, guys!

Maybe another alternative will suggest itself.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet : n5pvl@texoma.com

Instead of building newer and bigger weapons of destruction, mankind should be
thinking about getting more use out of the weapons we already have.

165. Re: [NETSIG:1562] RE: ACL/digipeating

From: moyers@ibm.net
Date: Sun, 16 Jul 95 23:17:10
To: netsig@tapr.org
Message-ID: <9507170629.AA0036@localhost>
Rendered body type: text/plain

> as part of the thread, Hank suggested:
>
> > >>Remove all of the digipeating code to make room for more
> > >>useful functions.
>
>   Doing this would hurt the operation of the APRS 'system' since it
> uses UI frames digipeated to disseminate the position data between multiple
> stations in somewhat of a conference mode.

>
>   If there was an alternative which would use less code than the
> digipeat code.............
>

Lets not forget that Digipeat was dropped from TheNet 2.10 for some of these same reasons and for the most part that version never recieved wide acceptance. Mostly because of the lack of digipeat. In highly covered areas I'm sure that a node disappearing causes few problems and the system just routes around it. However in this area if a node goes out your choices are either digipeat thru someone to get to the closest node, or you just don't make it. Considering this and the fact that packet is being used more and more in disaster recovery operations, what is the possibility that you will need the digipeat function just to get the traffic thru?? The current implimentation of digipeat control in TheNet x1j works well. It gives the sysop to turn digipeat off all together, not at all, or to restrict it usage to selcted parties via the acl command. It also has the ability to be turned back on IF NEEDED. So IMHO removing it from the code is shooting ourselves in the foot in emergency communications.

John Moyers N4QEA
moyers@ibm.net
Comm Tech - TENNESSEE EMERGENCY MANAGMENT AGENCY

166. Re: Re: microwave

From: KN6UO@aol.com
Date: Mon, 17 Jul 1995 02:48:21 -0400
To: netsig@tapr.org
Message-ID: <950717024821_34282514@aol.com>
Rendered body type: text/plain

>>>I too was concerned about the temperature stability of gunnplexers and
>>>discussed this with n6gn. He suggested if both gunnplexer terminals were
>>>exposed to the same climate, temperature drift might not be a problem
>>>since both units would tend to drift at the same rate.
>>
>>>73 de Jack
>>
>>I looked at the situation in the same way also. It seems like it would
work
>>especially if you use a design that has some frequency drift compensation.
>> But if you include sharp filters to allow syncronus data flow, which I
feel
>>is the way to go on 10 GHz, then you can easily drift out of the filters
>>range.
>>
>>Kevin
>
>But won't the RX stay locked to the other TX while it drifts?
>
>I think the net result is that both directions stay locked, but they could
be
>on very different frequencies...
>
>Thomas A. Moulton, W2VY   RAM Mobile Data
>w2vy@ram.net   (908) 602-5227

Tom, I am definately not an expert in this area but I can pass along what I have learned from talking to an expert or two. The person that I have talked at lenght with about this is in my consideration an expert. He said that he designed the Gunnplexer for ARR back in the late 70's if I remember right, and that the last time he looked at one they were still using his design. He has also written several published article on microwave and has held many distance records for microwave.

When I first asked about 10 GHz data links using Gunnplexers, I was told that it was possible. I was also told that both tranceivers were temperature sensitive and would have to be placed where they would have a fairly constant temperature. As far as the TX and the RX staying locked as they drift, they might using simplex. But if the temperature between the two sites varies by more than a few (I could not get exact numbers out) degrees they will not stay locked. The frequency drift is a severe problem with the Gunnplexers, especially if they will be placed on a mountain. If you are talking about temperature changes of 30 to 40 degrees in a 24 hour period you will see the temperature drift a LOT (also not exact). What I think a lot means is a 100 MHz or more. That is a lot of drift when you are talking of a signal of only about 200 KHz. Also when it drifts that much I don't think the RX and TX will drift the same amount.

When you look at allowing the frequency to drift when working duplex it is an entirely different ball game. If you TX at 10.2 GHz and RX at lets say 10.4 GHz you have to have very steep band pass filters on the RX. The filters would remain rock solid as the TX on the other end of the link drifted right out of the pass band. The result would be no data passed and a lot of expensive equipment up on the hill doing nothing but cooking bugs.

This may work on simplex if both ends of the link were in air conditioned buildings and you used the frequency drift compensation design. How many of us have access to air conditioned buildings on hill tops. I do, but am still inclined to look to a crystal controled 10 GHz tranceiver for the link here.

167. ACL/Digipeating.

From: roberts@ses6a.bt.co.uk
Date: Mon, 17 Jul 1995 08:35:50 +0100
To: netsig@tapr.org
Message-ID: <199507170736.CAA25565@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Chaps,

The amount of space taken by the digipeating code per se is tiny.
The amount of code needed to support digi fields is larger.

It would not be logical, as Spock might say, to remove the support
for digi, and I am not proposing to do so !

What I am willing to do is extend the ACL, so next version should
include the following (usual caveats - no guarantees etc)...

When a frame is digipeated via the node, the ACL will be scanned for
an entry that indicates 'no digipeat' or for a default entry if none
exists. If digipeat is marked as barred as a result of the ACL search,
then frames destined to or originating from that callsign will be
discarded.

As for release 4, the source code will be published at the same time
as the binaries.

Dave
G8KBB

168. Re: [NETSIG:1566] Re: Re: microwave

From: California Wireless Incorporated <cwi@rahul.net>
Date: Mon, 17 Jul 1995 02:07:46 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <199507170907.AA11113@foxtrot.rahul.net>
Rendered body type: text/plain

I couldn't help but mention my experience with gunnplexers on 10 GHz back
in the 70s.

We needed a hi-fi link between our repeater and a remote receiver, and we
thought, what the heck, might as well make it full duplex since it comes
"for free".

I decided on wideband FM. I got a couple of cheap FM tuners, and set the
dial to about 100 MHz. I also tapped off the AFC output.

In the handbook was a simple op-amp circuit that took the output from the
AFC and used it to drive the gunnplexer's VCO. Audio was AC-coupled onto
this DC bias signal.

The units were mounted inside some PVC pipe, and had a lightbulb inside for
temperature stability.

Once the units were locked, they tracked very well. They gave good service
with those small horns on about a 1 mile urban path. They were a little
tricky to aim, even with those low-gain horns.

I did not try running data through them (after all, this was before anything
but RTTY!), but it seems do-able with simple circuits.

good luck -Mike K3MC

169. Re: [NETSIG:1567] ACL/Digipeating.

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Mon, 17 Jul 1995 08:20:01 -0300

To: netsig@tapr.org
Message-ID: <199507171120.IAA19952@bud.peinet.pe.ca>
Rendered body type: text/plain

>Chaps,
>
>The amount of space taken by the digipeating code per se is tiny.
>The amount of code needed to support digi fields is larger.
>
>It would not be logical, as Spock might say, to remove the support
>for digi, and I am not proposing to do so !
>
>What I am willing to do is extend the ACL, so next version should
>include the following (usual caveats - no guarantees etc)...
>
>When a frame is digipeated via the node, the ACL will be scanned for
>an entry that indicates 'no digipeat' or for a default entry if none
>exists. If digipeat is marked as barred as a result of the ACL search,
>then frames destined to or originating from that callsign will be
>discarded.
>
>As for release 4, the source code will be published at the same time
>as the binaries.
>
>Dave
>G8KBB
>
>

Good stuff Dave, glad to hear the good news on both counts.
73 - Ron VE1AIC

170. uWave equipment....

From: paul@paccomm.com
Date: Mon, 17 Jul 95 10:22:39 UTC
To: netsig@tapr.org
Message-ID: <897@paccomm.com>
Rendered body type: text/plain

No, Gunn based units will be a lot of trouble given a wide range
of temperatures, etc. Only the very best Gunn oscillators would
be workable (military) and they wouldn't have been built to
work in the amateur bands.
The best route is the FET DRO door opener Doppler transceivers or
European DBS local oscillator blocks (they are typically at
10.3GHz....). I remember seeing a Toshiba FET DRO which would
fit the bill nicely about 5 years ago.

I was 2 terminal GaAs device manager at Plessey Microwave for
about 5 years and we made high performance GaAs Gunns, varactors
and PINs as well as InP Gunns and Si IMPATTs. I was in charge
of design, process control and unit assembly.........

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~     .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \______________/
                                                   ~~~~~~~~~~~~~~~~~~~~~~~
```

171. CoaxLAN and earlier TINY-2's

From: paul@paccomm.com
Date: Mon, 17 Jul 95 11:21:17 UTC
To: netsig@tapr.org
Message-ID: <912@paccomm.com>
Rendered body type: text/plain

N8MRX has reported a problem trying to get CoaxLAN to work
with some TINY-2's. We couldn't repeat the problem here......
until we tried some old 1.5 rev. boards!
The current board doesn't have a problem, but it looks like
v1.5 and earlier do (1.4 and 1.5 certainly do).
To fix the problem, find D8 on the board and cut the trace running
from the non-banded end on the solder side. That'll fix it.
Current rev. of board is 1.81, by the way.

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~     .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \_____________/
                                                    ~~~~~~~~~~~~~~~~~~~~~~~
```

172. APRS over net/rom ?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 17 Jul 95 11:11:39 PDT
To: netsig@tapr.org
Message-ID: <9507171111.ZM6481@hanko>
Rendered body type: text/plain

```
Some local folks recently posed this question:

How to set up net/rom and g8bpq switches to pass APRS beacons.

Can anyone shed some light on this one?

How do you do it in your part of the network?

   ...  Hank



--

Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

173. Re: [NETSIG:1560] RE: ACL/digipeating

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 17 Jul 95 12:22:37 PDT
To: netsig@tapr.org
Message-ID: <9507171222.ZM6608@hanko>
Rendered body type: text/plain

```
On Jul 16,  7:56am, Tom Moulton wrote:
> Subject: [NETSIG:1560] RE: ACL/digipeating
> >>Remove all of the digipeating code to make room for more
> >>useful functions.
> >>
> >>   ...  Hank
> >>
> >
> >That sounds like an excellent idea to me, Hank!  In this day and age,
> >digipeating really is a terrible waste of EPROM space.
> >
> >
> >73 DE Charles Brabham   Packet Radio :  N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>
> Hold on thar missy!
>
> Before we start deleting support for digipeater fields we need to understand
> something about ROSE.
>
> Since ROSE was designed to use the AX.25 Repeater Addresses for specifing the
> Network addresses ROSE uses and Requires Digipeater fields.
>
> This allows ROSE to get all the information it needs in the Connect Request
> and also lets ROSE be 100% transparent to user data, ie no network level
> commands hidden in the data.
>
> So while Digipeating may not be required, the digipeater fields do need to be
> supported to allow connecting through ROSE networks.


Perhaps I don't understand ROSE very well: are you saying ROSE
requires source routing?  If so, that seems like a problem that
needs to be fixed, not a feature that needs to be supported.
```

... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

174. Re: [NETSIG:1561] Networks real and imagined

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 17 Jul 95 12:42:59 PDT
To: netsig@tapr.org
Message-ID: <9507171242.ZM6632@hanko>
Rendered body type: text/plain

On Jul 16, 8:17am, Karl F. Larsen wrote:
> Subject: [NETSIG:1561] Networks real and imagined

>
> Charles this message of yours is too long. I didn't read it
> because I know what it says. TCP/IP is the bane of the network person.
> Spoken like a person who has tried NOS but never got it up and running
> well. Or a person who can't find another NOS ham to talk to.

Ok, I'll chime in here. Please read all of Charles' message, as he has
made some very important points. I happend to agree with all of them,
and I do run NOS (in fact it's the DNS and main router for the Portland
metro area, as well as the ax.25/ip email gate). Please consider very
very carefully the potential results of moving long haul ham radio
networking to commercial networks.

> On Sun, 16 Jul 1995, Charles Brabham wrote:
>
> > >According to Greg Jones...
> >
> > >Charles,
> > >
> > >If you discuss this with Tom, which I have lots of time, his point is that
> > >we shouldn't be trying to build a national terrestrial RF network . That
> > >these long-haul connections should be provided by commercial connections,
> > >yet to be defined high-speed HF, amateur satellites, or any means
possible.
> > There is currently no way to provide the speed and reliability needed for
> > these high-speed, Long-Haul point-to-point links with RF, and none in the
> > forseeable future.
> > There is also no NEED for these links unless you're planning on using
TCP/IP.
> >
> > Again, this points out TCP/IP's fundamental unsuitability for HAM RADIO
> > applications over any appreciable distance. You can't do it properly with
> > radios!
> > Store 'n Forward messaging may be slow, but has been proven to work well
> > with radios, even over long distances. This makes the messaging system we
> > have MUCH more advanced than TCP/IP, AS A HAM RADIO APPLICATION.
> >
> Charles, there are hams using NOS, the TCP/IP software to send
> messages to the Store and forward Packet BBS system. But your right, the
> IP router is an end-to-end device and you must have a usable
> communications path between them.
>
> The Packet BBS network was a working national network of limited
> capability before the internet became such a vital link in the network. I
> recall that mail was pretty fast to the west coast from NM but a lot
> slower going east. Problem is there is no VHF path from NM to Texas. And
> Texas is large...:)

Pleas folks! The internet is not in *any* way a part of the ham radio
network! Is this so hard to understand? If the internet is indeed a
"vital link" that makes the ham radio network possible, then I am proved
right, and the ham radio network *will* be dead in that 12-36 month
time frame.

I think this issue is the most important topic these groups can discuss.
If the ham radio network indeed dies, then these groups all go away,
and we all subscribe to alt.bbs.your_favorite_kind and sell our no
longer needed radios.

> > UHF in many hops is VERY adequate for Ham appplications such as the store
> > and forward messaging system which hams currently use. With the addition of
> > suitable (cheap) backup links, UHF in many hops will do it much BETTER
> > than it currently does, and this is something which can be done with RF.
> >
>
>   Well yes and no. Many hops means the 1200 baud nodes are sending
> data at 100 baud effective. This is TYPICAL! And someone needs to live
> near where the nodes are and keep them fixed.

100 baud? Huh? I forward over some paths that use 6-8 1200 baud links.
Data rate is typically 250-500 bps over these paths. This is measured
data rate during path stress tests of several hours duration. If you
get 100 bps, then there is something seriously wrong with your network.

<deletia>

> > When hams do this, they advance the art. That's part of what hams are here
for.
>
>
>   Not really Charles, they make the long haul with 300 baud HF
> packet radio. This works because a very few hams with good radios and
> antenna's can pass the mail a long distance. Reliability is a problem.
> The band conditions do mess up things. But this did work and work well,
> and still does. But it in no way advanced the art.

Some of us do it with 750 bps CLOVER modems. If I understand your
argument here you advocate shutting down this HF network and replacing
it with commercial network links. Did I misunderstand?

> >
> > Wirelines are a crutch which hams can and should try thier best to do
without.
> > As ham radio operators, we oughta stand up on our hind legs, toss our
> > crutch, and be PROUD of what we CAN accomplish with RF.

<deletia>

>   Getting from city to city is the problem. We in Las Cruces, NM
> solved getting from El Paso to Midland. I forward via the ham internet
> gateway system to Remi F6CNB in Sugarland. It's fast, and uses radio at
> both ends. And it uses TCP/IP at both ends. And it uses the telephone
> company over 99% of the trip.

And it's not ham radio. If you don't mind me being a bit flip: Whoop de doo!

Sorry you are unable to create ham radio networking and decided to become
a "LL Lid" instead. I know, it is *easy* and it is *cheap* but it isn't
ham radio. It is sad when hams just give up and take this attitude
of "it's sooooo hard we just cannot do it." How about trying some other
solutions, like HF or troposcatter or recruiting some more folks to
help build the links you need, etc. etc.

>   Why don't I use HF? The internet is easier and free!

Ok, now I understand. You *are* a "LL Lid" and prefer to help destroy
ham radio rather than advance it. Whether you like that characterization
or not, that is what I (and many many others) think you are doing.

If these SIGs can help stamp out this attitude and behavior, they will,
in my opinion, have done the work they are designed to accomplish.

> > That's just me though. I don't see the limitations and challenges of using
> > radios as a drawback for hams. I see them as the root cause of the advances
> > we have made, and of our progress in the future.
> >
>
>   Problem is we haven't done anything that can be called "advances"
> with radios. The radios we use are old commercial radios thrown away by
> the railroads.
>
>   I see future progress being made by the HF hams. If they can get
> busy and set up a real network, not just what happened to exist, and try
> 1200 baud on 20 meters, and 30 meters too, they might be a viable
> alternative to the internet (telephone company).

Good news! Lots of us are already on air with 750 bps capability.
It works, and it works well. Spend the $395 for a modem and join us.

You will probably save that $395 in just a few months of reduced
telephone bills ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

175. Re: [NETSIG:1573] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 17 Jul 95 15:46:13 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c3c@ram.net>
Rendered body type: text/plain

>Perhaps I don't understand ROSE very well: are you saying ROSE
>requires source routing? If so, that seems like a problem that
>needs to be fixed, not a feature that needs to be supported.
>
>   ... Hank

Keeping in mind that the only way to specify AX.25 addressing is digipeater
fields, ROSE uses them to specify Network addresses.

Assuming we had ROSE connectivity between us you could connect to my station
by typing the following into your TNC:

C W2VY Via W0RLI-3,201338

Where W2VY is the destination callsign
      W0RLI-3 is the callsign of the ROSE switch on your RF channel
      201338 is the Network address of the ROSE switch local to W2VY

And if you were in a different area you would only need to change the switch
callsign otherwise everything would work the same...

Using the digipeater fields keeps it simple and alows for things like APRS to
work as well...

It is not source routing, since you only specify the entry callsign and exit
Network Address, not all the hops... (or even a subset of the hops)

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

176. TAPR's Regional Digital Group List

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 17 Jul 1995 15:30:54 -0500 (CDT)
To: tapr-bb@tapr.org (TAPR-BB mailing), bbssig@tapr.org (BBS SIG mailing),
        netsig@tapr.org (NETSIG mailing)
Cc: psr@tapr.org (PSR), tapr-board@tapr.org (TAPR Board),
        tapr-sys@dingus.n5lyt.ampr.org (TAPR SYS)
Message-ID: <199507172030.PAA20114@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Regional Digital Organizations List (7/1/95)

This list is now available as part of the TAPR Web Page.
        http://www.tapr.org/tapr/html/regional_groups.html

or can be accessed from the TAPR Home Page
        http://www.tapr.org/tapr

If your regional organization has a web page or Internet e-mail address,
please let us know, so that we can generate the required link from this
page to your page. We have linked as many as we know about.

==========

If you have corrections or additions to this list, please contact the
office. TAPR hopes to keep this list as accurate as possible in order to
refer information and individuals to their regional group(s).

Amateur Radio Research and Development Corp (AMRAD)
PO Box 6148
McLean, VA 22106-6148
Newsletter: AMRAD Newsletter

American Radio Relay League (ARRL)
225 Main St
Newington, CT 6111
Internet: INFO@ARRL.ORG
http://www.acs.oakland.edu/barc/arrl.html
Newsletter: QEX / Gateway

Arizona Packet Radio Association
8402 E Angus Dr
Scottsdale, AZ 85251

Central Illinois Packet Radio User Society (CIPRUS)
c/o Larry Keeran K9ORP
RR 1 Box 181
Hudson, IL 61748-9750

Central Iowa Technical Society (CITS)
c/o Ralph Wallio W0RPK
1250 Hwy G24
Indianapolis, IA   50125

Chicago Amateur Packet Radio Association (CAPRA)
PO Box 8251
Rolling Meadows, IL 60008
Newsletter: The CAPRA Beacon

Cincinnati Amateur Packet Radio Experimenters Society (CAPRES)
c/o John Schroer IV KA8GRH
948 Halesworth Dr
Forest Park, OH 45240

Colorado Digital Electronics (CODE)
3631 Brentwood Terrace
Colorado Springs, CO 80910
Internet: info@code.org

Colorado Packet Association (COPA)
c/o John Radomski KT0H
2080 S Fairplay
Aurora, CO 80014

Connecticut Digital Radio Association (CONNECT)
c/o Tom Hogerty, KC1J
83 Harold Rd
Farmington, CT 6032

Eastern Packet Radio of Michigan (EPROM)
c/o Jay Nugent WB8TKL
3081 Braeburn Cir
Ann Arbor, MI 48104

EastNet BackBone Network (EBN)
c/o John Gubernard, K2LSX
81 Harcourt Ave
Bergenfield, NJ 07621-1916

Florida Amateur Digital Communications Association (FADCA)
812 Childers Loop
Brandon, FL 33511
Newsletter: FADCA>Beacon

Georgia Radio Amateur Packet Enthusiast Society (GRAPES)
PO Box 871
Alpharetta, GA 30239-0871
http://www.mindspring.com/~bobm/grapes/grapes.html
Newsletter: Grapevine

Hamilton and Area Packet Network (HAPN)
Box 4466 Station D

Hamilton, ON L8V 4S7
Canada

HEX 9 Group
PO Box 151
Orilla, ON L3V 6J3
Canada

Mid-Atlantic Packet Radio Club
c/o Tom Clark W3IWI
6388 Guilford Rd
Clarksville, MD 21029

Mississippi Amateur Radio Digital Association (MARDA)
c/o Patrick J Fagan WA5DYV
2412 E Birch Dr
Gulfport, MS 39503

Mt Ascutney Amateur Packet Radio Association
c/o Carl Breuning N1CB
54 Myrtle St
Newport, NH 03773

Mt Beacon Amateur Radio Club
PO Box 841
Wappingers Falls, NY 12590

New England Packet Radio Association (NEPRA)
PO Box 208
East Kingston, NH 03827
Newsletter: NEPRA PacketEar

North East Digital Association (NEDA)
PO Box 563
Manchester, NH 03105
http://www.cam.org/~dino/neda/neda.html

Northern California Packet Association (NCPA)
6608B Alhambra Ave Suite 111
Martinez, CA 94553
Newsletter: NCPA Download

Northwest Amateur Packet Radio Association (NAPRA)
c/o John Gates N7BTI
750 Northstream Ln
Edmonds, WA 98020
Newsletter: Zero Retries

Ohio Packet Enthusiasts Club (OPAC)
c/o Bob Ball WB8WGA
830 Riva Ridge Blvd
Gahanna, OH 43230

Oregon Digital Network Coordination Council (ODNCC)
7860 SW 69th Av
Portland, OR 97223

Pacific Packet Radio Society (PPRS)
PO Box 51562
Palo Alto, CA 94303

Packet Radio Organization of Montana (PROM)
c/o Glenda Allen KE7TB
165 Conifer Rd
Libby, MT 59923

Packeteers of Long Island (POLI)
c/o Alex Mendelsohn AI2Q
92 Hathaway Av
Elmont, NY 11003
Newsletter: The POLI Parrot

Pennsylvania Packet Association (PaPA)
c/o Bryan Simanic WA3UFN
9 Wild Cherry Dr
DuBois, PA 15801

Puget Sound Amateur Radio TCP/IP Group
c/o Steve Stroh N8GNJ

14919 NE 163rd Street
Woodinville, WA 98072

Radio Amateur Satellite Corp (AMSAT)
PO Box 27
Washington, DC 20044
http://www.qualcomm.com/amsat/AmsatHome.html
Newsletter: AMSAT Journal

Radio Amateur Telecommunications Society (RATS)
c/o J Gordon Beattie Jr N2DSY
206 North Vivyen St
Bergenfield, NJ 07621
http://www.webcom.com/~arfunk/rats.html

Rochester Packet Group
c/o Fred Cupp W2DUC
27 Crescent Rd
Fairport, NY 14450

San Diego Packet Group (SDPG)
c/o Mike Brock WB6HHV
10230 Mayer Cir
San Diego, CA 92126

San Diego Packet Radio Association (SANDPAC)
c/o Barry Gershenfeld
5085 Arroyo Lindo Av
San Diego, CA 92117
Newsletter: San Diego Packet Radio Association Newsletter

South Carolina Amateur Radio Digital Society (SCARDS)
PO Box 1281
Columbia, SC 29202
Newsletter: SCARDS Newsletter

Southern Amateur Packet Society (SAPS)
c/o Wayne Harrell WD4LYV
Rt 1 Box 368
Sycamore, GA 31790

Southern California Digital Communications Council (SCDCC)
PO Box 2744
Huntington Beach, CA   92647-2744
Newsletter: The I-Frame

Tennessee Network (TENNET)
c/o Jeffrey Austen K9JA
2051 Clearview Drive
Cookeville, TN 38506
Internet: jra1854@tntech.edu

Texas Packet Radio Society (TPRS)
PO Box 50238
Denton, TX 76206-0238
Internet: wo5h@tapr.org
http://www.tapr.org/tprs
Newsletter: The TPRS Quarterly Report

Tucson Amateur Packet Radio Corporation (TAPR)
8987-309 E. Tanque Verde Rd #337
Tucson, AZ 85749-9399
Internet: TAPR@TAPR.ORG
http://www.tapr.org/tapr
Newsletter: Packet Status Register

TwinsLAN Amateur Radio Club
c/o Kermit Kramer W0RFD
1121 Xerxes Av S
Minneapolis, MN 55405
Newsletter: The TwinsLAN Beacon

Utah Packet Radio Association (UPRA)
c/o Bart Van Allen KA7ZFD
11883 S Kinney Cir
Riverton, UT 84065

Vancouver Amateur Digital Communications Group (VADCG)
9531 Odlin Rd

Richmond, BC V6X 1E1
Canada
Newsletter: The Packet

Wake Digital Communications Group (WDCG)
c/o Randy Ray WA5SZL
9401 Taurus Ct
Raleigh, NC 27612

Western Michigan Packet Radio Association (WMPRA)
PO Box 4612
Muskegon, MI   49444

Wisconsin Amateur Packet Radio Association (WAPRA)
PO Box 1215
Fond Du Lac, WI 54935
Newsletter: Badger State Smoke Signals

177. Re: [NETSIG:1572] APRS over net/rom ?

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 17 Jul 1995 14:38:52 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950717143600.29040B-100000@acca>
Rendered body type: text/plain

On Mon, 17 Jul 1995, Hank Oredson wrote:

>
> Some local folks recently posed this question:
>
> How to set up net/rom and g8bpq switches to pass APRS beacons.
>
> Can anyone shed some light on this one?
>
> How do you do it in your part of the network?
>
>   ... Hank
>

Well the BPQ switch is simple. turn on the beacon and tell it to send
your addres in aprs form. I do it every 15 minutes but that's selectable
as well....

For nodes it depends which type. I think the X1J is do'able but forget
just how....

73, karl

> > > -- >
> Hank Oredson @ Mentor Graphics   Library Operations
> Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
> Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
>

178. Re: [NETSIG:1575] RE: ACL/digipeating

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 17 Jul 95 13:45:53 PDT
To: netsig@tapr.org
Message-ID: <9507171345.ZM6736@hanko>
Rendered body type: text/plain

On Jul 17, 2:51pm, Tom Moulton wrote:
> Subject: [NETSIG:1575] RE: ACL/digipeating
> >Perhaps I don't understand ROSE very well: are you saying ROSE
> >requires source routing? If so, that seems like a problem that
> >needs to be fixed, not a feature that needs to be supported.
> >
> >   ... Hank
>

> Keeping in mind that the only way to specify AX.25 addressing is digipeater
> fields, ROSE uses them to specify Network addresses.
>
> Assuming we had ROSE connectivity between us you could connect to my station
> by typing the following into your TNC:
>
> C W2VY Via W0RLI-3,201338
>
> Where W2VY is the destination callsign
>   W0RLI-3 is the callsign of the ROSE switch on your RF channel
>   201338 is the Network address of the ROSE switch local to W2VY
>
> And if you were in a different area you would only need to change the switch
> callsign otherwise everything would work the same...
>
> Using the digipeater fields keeps it simple and alows for things like APRS to
> work as well...
>
> It is not source routing, since you only specify the entry callsign and exit
> Network Address, not all the hops... (or even a subset of the hops)

Ok, perhaps I used the term incorrectly.

In a net/rom network (more correctly, the g8bpq switch network
as we implement it here in the PNW), I would type:

C W2VY

and would not need to know the "network" entry and exit points,
as the "exit" point is the network address of the service I wish
to connect with, and the entry point is implied; it is the network
address that initiated the connect.

Is there a directory in ROSE that holds the assocations between
201338 and W2VY? Or is that something I have to know by other means?

If I were running a ROSE switch on my PC, could it have multiple
network names, where the different names are associated with the
different services provided by the machine that is the switch?

Perhaps I first should have asked: Is there a ROSE implementation
that runs as a TSR in DOS or a DLL in windows, with API so that
applications can use the network directly? If not, where can I
locate the ROSE spec to see how hard it would be to construct such
a TSR or DLL.

(I'm asking all these questions because we have pretty much pushed
net/rom and bpq switch capabilites as far as we can, and are starting
to look at alternative ways of doing things. tcp/ip has been tried
and found wanting as layer 3/4 transport, we are playing with
whatever we can find to see how it works and how it performs in
a real network environment.)

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

179. Re: [NETSIG:1574] Re: Networks real and imagined

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 17 Jul 1995 15:11:42 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950717144735.29040C-100000@acca>
Rendered body type: text/plain

Hank, you make me mad at times. You choose to belittle what
others think because they do not conform to your thinking. Now rather
than comment to your comments here is a restatement of what I said.

        1. A lot of *HAMS* are using the internet, the thing you used to
answer my last message, to forward packet bbs traffic. In my case it's
free. I don't pay the telephone company a penny. Someone else does. I
will continue to use the internet and it will NOT cause the end to ham
radio. Buit it sure gets the messages thru in record time!

For instance I wrote a bulletin saying that JNOS110K with FBB forwarding was available on my telephone bbs. I sent it out to Remi in Sugarland, TX about 2:00 PM MDT. About 6:00 PM MDT my telephone bbs was busy for a solid hour, until the cheap telephone rate went off on the WEST COAST! Now that is speed!

You are running 750 bit/sec using Clover I gather. That is interesting and is it legal? Jack Taylor asked you to tell him how much message traffic you pass on a typical day. I too would like an answer. If it is good then, as I said, we can use HF for the long haul between cities and towns.

The facts are present Hank for you to see. The cities and large towns are doing fine using radio at 1200 and 9600 baud. The gap is connecting between them. Lightning killed a node that is part of the link to Tuscon, AZ. So it's back to the internet until it can be fixed.

I think you are wrong Hank. The internet will not kill ham radio. But a misunderstanding of the realities of current ham BBS practice can lead to fighting and flames. I do not hide what I do with the internet because I KNOW it's the thing to do now. It may change. But for now it is good and nothing you say will make it otherwise.

Wednesday I tug my trailer to Flagstaff, AZ and Saturday I will enjoy a meeting of the Arizona packet networking group. This is one of the best organized groups around. They are doing some neat things. I will take notes and put them here. Or maybe Dan M. will do it. Or both of us.

73, de karl k5di

180. Re: [NETSIG:1573] RE: ACL/digipeating

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 17 Jul 1995 17:28:47 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507171638.B26957-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Hank, using ROSE is sort of like using the telphone, but instead of having to pick up the hand piece or hit the speakerphone button and THEN dial the distant number, you do it all in one connect line.

Example:
I want to connect to wb5cqu out in Double Oak Tx. I would issue a connect like this

```
C wb5cqu v k0zxf-9 817491
    |        |       |---------------Distant Switch Address
    |        |------------Local Switch Callsign
    |-------------Target call to whom I am connecting.
```

My local switch k0zxf-9 intercepts this "digi" string returns a UA to the recieved SABM, and at the same time looks at it's routing tables to see where to route the call. In this case (sorry about that) it is going on a fibre link to Dallas TX (bandwidth on loan from IBM) where it pops out and makes it's way up to Double Oak, about 3 switches north of Dallas.

In setting up the path to Double Oak, the switches on the Tampa end, only worry about the 817 part of the addres, they route on that part only.

As the link setup gets closer to Double Oak, at some point the switches will be routing on the whole 6 digits.

When it finally arrives at the far end, a SABM is issued to wb5cqu and of course if he is there the UA will be returned and a msg will come back to my end telling me the path is setup and I can start passing data.

The whole process took what locals call a "single line connect". Which is operationally the same as taking the phone offhook and dialing at the same time.

Now, Tom has ROSE code under test that will, if you use the unproto command in your TNC, allow you to set up a path and send UI frames down that path just as you would set up a VC over the same path. I have done some very interesting work with ROSE and TNOS doing mobile packet, again aided by the ease of the addressing format in ROSE.

For APRS,TCP,mobile packet and other UI modes this makes the network transparent to them too, something that had been missing network wise under ROSE.

One of the neat things about this system is that regardless of the size of the network, the connection format remains the same. If you go across international boundaries you add another 4 digit address to the one already in use that additional address indicates the target country to where you are directing the call.

We are presently trying to set up a link over the Internet (oops one of those dirty words again 8+}) to Australia to link the Australian ROSE network with the one in Tampa, this being done using TNOS which carries these links transparently also. We are looking at setting up another one to the Telephone Pioneers group up in Canada using the same concept. Here is the format for the added DNIC.

C VK2AAB v K0ZXF-9 5050,248700

5050 is the DNIC for Australia.

Since I have had to bring up the usage of land line links in this message, I should like to clear things up a bit here.
I too dream of having RF links as the primary routing for these links,at the same time, I can not look the gift horse of land line paths in the mouth. These links allow our keyboarders to set down and enjoy connections far beyond where our RF paths take us right now, as we bring RF links on line we try to make them primary, and if the land line links remain the become backups to the RF.

This brings up a question, last I saw the satellite that AMSAT is building was about $2k short, this satellite will provide I believe up to or greater than 8 hours of digital coverage per day. That is a great step forward, I wonder how many of you have helped a bit with that project??? A few well placed satellites would give us the long haul high speed links that we need to get started.

Perhaps our TAPR people can put in a update on this for us.

Those of us who are interested in tropo and ms (that ain't Micro$oft Either) are interested in these propagation techniques with the idea of replacing some of these wire paths with RF paths. Maybe we are taking a leak up wind but a lot of amateur radio turns out to be so, that is part of the fun of it. But every once in a while someone hits on a something, maybe not new, but by applying new technology to the idea, they come up with a new working concept.

I did not mean to bring up the wire line link in this, but in order to demonstrate how we are connecting to the distant VK network, I felt it necesary for you to know how we get there.

I am sorry this got so long, and I hope it explains how you set up a connection over ROSE.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

181. Re: [NETSIG:1577] Re: APRS over net/rom ?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 17 Jul 95 15:20:08 PDT
To: netsig@tapr.org
Message-ID: <9507171520.ZM6896@hanko>

Rendered body type: text/plain

On Jul 17, 4:06pm, Karl F. Larsen wrote:
> Subject: [NETSIG:1577] Re: APRS over net/rom ?
>
>
> On Mon, 17 Jul 1995, Hank Oredson wrote:
>
> >
> > Some local folks recently posed this question:
> >
> > How to set up net/rom and g8bpq switches to pass APRS beacons.
> >
> > Can anyone shed some light on this one?
> >
> > How do you do it in your part of the network?
> >
> >   ... Hank
> >
>   Well the BPQ switch is simple. turn on the beacon and tell it to send
> your addres in aprs form. I do it every 15 minutes but that's selectable
> as well....

How does this help? The beacon would be transmitted on the backbone
frequencies and would never be seen by any users. What I need is a
real basic idea of how APRS is used.

Some things I don't know: how do you get those beacons to the places
that users can see them? Perhaps our network is different than most
others, but the resources our users tend to use (and want to know about)
may be several to a dozen network hops away, or located on frequencies
they cannot directly access becuse they lack the gear or cannot
directly connect to those resources. Our network is pretty well
"cellurized" with many dozens of network access points in the metro
area, and several hundred access points in the whole region.

I guess what I've not understood is the overview of APRS ... the "what
it does" and "why users want that" parts of the equation. I do understand
the technical part of "what it does", that's easy. I don't understand
the value delivered to the users by that technical "what it does."

Just looking for new toys for the local users ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

182. Re: [NETSIG:1579] Re: Networks real and imagined

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 17 Jul 95 15:34:19 PDT
To: netsig@tapr.org
Message-ID: <9507171534.ZM6920@hanko>
Rendered body type: text/plain

On Jul 17, 4:42pm, Karl F. Larsen wrote:
> Subject: [NETSIG:1579] Re: Networks real and imagined
>
>   Hank, you make me mad at times. You choose to belittle what
> others think because they do not conform to your thinking. Now rather
> than comment to your comments here is a restatement of what I said.

I'm sorry you think that is what I was doing.

I was complaining about those folks who's actions may very well
destroy the precise topic this SIG is designed to promote.

>   1. A lot of *HAMS* are using the internet, the thing you used to
> answer my last message, to forward packet bbs traffic. In my case it's
> free. I don't pay the telephone company a penny. Someone else does. I
> will continue to use the internet and it will NOT cause the end to ham
> radio. Buit it sure gets the messages thru in record time!

Again: "Whoop de Doo!"

Please justify your "will not cause the end ...". Nobody has suggested
that it will cause the end *of ham radio*. I have suggested, because
of my experience attempting to create the long haul network, that it
will cause the end of that network, and soon: 12-36 months.

>   For instance I wrote a bulletin saying that JNOS110K with FBB
> forwarding was available on my telephone bbs. I sent it out to Remi in
> Sugarland, TX about 2:00 PM MDT. About 6:00 PM MDT my telephone bbs was
> busy for a solid hour, until the cheap telephone rate went off on the
> WEST COAST! Now that is speed!

And that is presented load that never hit the long haul ham radio network.
Why should we build better long haul networks when we don't need them?
We won't. We will take the simple way out and let the lazy folks kill
off the existing long haul network.

>   You are running 750 bit/sec using Clover I gather. That is
> interesting and is it legal? Jack Taylor asked you to tell him how much
> message traffic you pass on a typical day. I too would like an answer. If
> it is good then, as I said, we can use HF for the long haul between
> cities and towns.

Read my previous post on this topic. Also remember bps does not equal
baud rate. We are not restricted in how many bps we can send, but only
in how many baud we use while sending it.

>   The facts are present Hank for you to see. The cities and large
> towns are doing fine using radio at 1200 and 9600 baud. The gap is
> connecting between them. Lightning killed a node that is part of the link
> to Tuscon, AZ. So it's back to the internet until it can be fixed.

Why would anyone bother to fix it, if the commercial network works so much
better? Why would you not re-route this traffic via other *ham radio* means?
Does nobody in your area own an HF radio?

>   I think you are wrong Hank. The internet will not kill ham radio.
> But a misunderstanding of the realities of current ham BBS practice can
> lead to fighting and flames. I do not hide what I do with the internet
> because I KNOW it's the thing to do now. It may change. But for now it is
> good and nothing you say will make it otherwise.

Why is it a good thing? That's like saying the telephone is a good thing
because it works when 20M is not open, instead of putting up a 40M
antenna and trying that band instead. Can you document cases where having
internet forwarding has *in any way* benefited the growth of the ham radio
network? In my experience, once internet forwarding has removed the
presented load from the long haul ham radio network, that long haul network
dies, *and is never rebuilt*, because there is no pressure to rebuild it.

If we wish to change the charter of these SIGs to "networking FOR radio
amatuer use" instead of "networking using amateur radio" then the view
you espouse might make sense. For the present charter of these groups,
your view provides much more harm than good, and I for one would prefer
to see it removed from the discussion.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

183. RE: [NETSIG:1574] Re: Networks real and imagined

From: "Wolf, Ted" <Wolft@dbisna.com>
Date: Mon, 17 Jul 95 19:10:00 PDT
To: netsig <netsig@tapr.org>
Message-ID: <300B18B4@msipgw1.us.dbisna.com>
Rendered body type: text/plain

Just my two cents worth;

All of this is truly moot as for the need to created a real network you
would have to have cooperation and some hams willing to spend money :>;)
which we all know there are very few. In order to compete with the Internet
we need high speed local access (9600 min) and tru hubs connected by high

speed backbones. HF is not usefull unless someone can get a reliable link of
at least 56kb. Other wise we will have once again created a system that will
have a very short lifetime.

Of course opinions are my own!!

Ted Wolf Jr   KB2BLX

From: netsig
To: netsig
Subject: [NETSIG:1574] Re: Networks real and imagined
Date: Monday, July 17, 1995 2:49PM

On Jul 16, 8:17am, Karl F. Larsen wrote:
> Subject: [NETSIG:1561] Networks real and imagined

>
>   Charles this message of yours is too long. I didn't read it
> because I know what it says. TCP/IP is the bane of the network person.
> Spoken like a person who has tried NOS but never got it up and running
> well. Or a person who can't find another NOS ham to talk to.

Ok, I'll chime in here. Please read all of Charles' message, as he has
made some very important points. I happend to agree with all of them,
and I do run NOS (in fact it's the DNS and main router for the Portland
metro area, as well as the ax.25/ip email gate). Please consider very
very carefully the potential results of moving long haul ham radio
networking to commercial networks.

> On Sun, 16 Jul 1995, Charles Brabham wrote:
>
> > >According to Greg Jones...
> >
> > >Charles,
> > >
> > >If you discuss this with Tom, which I have lots of time, his point is
that
> > >we shouldn't be trying to build a national terrestrial RF network .
 That
> > >these long-haul connections should be provided by commercial
connections,
> > >yet to be defined high-speed HF, amateur satellites, or any means
possible.
> > There is currently no way to provide the speed and reliability needed
for
> > these high-speed, Long-Haul point-to-point links with RF, and none in
the
> > forseeable future.
> > There is also no NEED for these links unless you're planning on using
TCP/IP.
> >
> > Again, this points out TCP/IP's fundamental unsuitability for HAM RADIO
> > applications over any appreciable distance. You can't do it properly
with
> > radios!
> > Store 'n Forward messaging may be slow, but has been proven to work well
> > with radios, even over long distances. This makes the messaging system
we
> > have MUCH more advanced than TCP/IP, AS A HAM RADIO APPLICATION.
> >
>   Charles, there are hams using NOS, the TCP/IP software to send
> messages to the Store and forward Packet BBS system. But your right, the
> IP router is an end-to-end device and you must have a usable
> communications path between them.
>
>   The Packet BBS network was a working national network of limited
> capability before the internet became such a vital link in the network. I
> recall that mail was pretty fast to the west coast from NM but a lot
> slower going east. Problem is there is no VHF path from NM to Texas. And
> Texas is large...:)

Pleas folks! The internet is not in *any* way a part of the ham radio
network! Is this so hard to understand? If the internet is indeed a
"vital link" that makes the ham radio network possible, then I am proved
right, and the ham radio network *will* be dead in that 12-36 month
time frame.

I think this issue is the most important topic these groups can discuss.

If the ham radio network indeed dies, then these groups all go away,
and we all subscribe to alt.bbs.your_favorite_kind and sell our no
longer needed radios.

> > UHF in many hops is VERY adequate for Ham appplications such as the
store
> > and forward messaging system which hams currently use. With the addition
of
> > suitable (cheap) backup links, UHF in many hops will do it much BETTER
> > than it currently does, and this is something which can be done with RF.
> >
>
>   Well yes and no. Many hops means the 1200 baud nodes are sending
> data at 100 baud effective. This is TYPICAL! And someone needs to live
> near where the nodes are and keep them fixed.

100 baud? Huh? I forward over some paths that use 6-8 1200 baud links.
Data rate is typically 250-500 bps over these paths. This is measured
data rate during path stress tests of several hours duration. If you
get 100 bps, then there is something seriously wrong with your network.

<deletia>

> > When hams do this, they advance the art. That's part of what hams are
here
for.
>
>
>   Not really Charles, they make the long haul with 300 baud HF
> packet radio. This works because a very few hams with good radios and
> antenna's can pass the mail a long distance. Reliability is a problem.
> The band conditions do mess up things. But this did work and work well,
> and still does. But it in no way advanced the art.

Some of us do it with 750 bps CLOVER modems. If I understand your
argument here you advocate shutting down this HF network and replacing
it with commercial network links. Did I misunderstand?

> >
> > Wirelines are a crutch which hams can and should try thier best to do
without.
> > As ham radio operators, we oughta stand up on our hind legs, toss our
> > crutch, and be PROUD of what we CAN accomplish with RF.

<deletia>

>   Getting from city to city is the problem. We in Las Cruces, NM
> solved getting from El Paso to Midland. I forward via the ham internet
> gateway system to Remi F6CNB in Sugarland. It's fast, and uses radio at
> both ends. And it uses TCP/IP at both ends. And it uses the telephone
> company over 99% of the trip.

And it's not ham radio. If you don't mind me being a bit flip: Whoop de
doo!

Sorry you are unable to create ham radio networking and decided to become
a "LL Lid" instead. I know, it is *easy* and it is *cheap* but it isn't
ham radio. It is sad when hams just give up and take this attitude
of "it's sooooo hard we just cannot do it." How about trying some other
solutions, like HF or troposcatter or recruiting some more folks to
help build the links you need, etc. etc.

>   Why don't I use HF? The internet is easier and free!

Ok, now I understand. You *are* a "LL Lid" and prefer to help destroy
ham radio rather than advance it. Whether you like that characterization
or not, that is what I (and many many others) think you are doing.

If these SIGs can help stamp out this attitude and behavior, they will,
in my opinion, have done the work they are designed to accomplish.

> > That's just me though. I don't see the limitations and challenges of
using
> > radios as a drawback for hams. I see them as the root cause of the
advances
> > we have made, and of our progress in the future.
> >
>
>   Problem is we haven't done anything that can be called "advances"

> with radios. The radios we use are old commercial radios thrown away by
> the railroads.
>
>   I see future progress being made by the HF hams. If they can get
> busy and set up a real network, not just what happened to exist, and try
> 1200 baud on 20 meters, and 30 meters too, they might be a viable
> alternative to the internet (telephone company).

Good news! Lots of us are already on air with 750 bps capability.
It works, and it works well. Spend the $395 for a modem and join us.

You will probably save that $395 in just a few months of reduced
telephone bills ...

   ... Hank

 --

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

184. FlexNet (was acl/digipeating)

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 17 Jul 1995 17:00:11 -0700
To: netsig@tapr.org
Message-ID: <199507180009.TAA07160@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Speaking of ROSE operation, a few years ago I had the opportunity to explore
a part of the German FlexNet system in europe. My entry was via our local
AZSE ten meter 1200 baud node into eastern Canada, thence over 2M to an
internet gateway which terminated in Switzerland.

The Swiss station had a radio port into France, Germany, etc. Took awhile
to learn the FlexNet node commands but once that was accomplished, was able
to move around pretty easily.

All-in-all, I LIKED the feel of FlexNet. It appeared to be ROSE-like but
with an autorouter. Didn't try it, but got the impression the autorouter
would allow one (after doing the equivalent of a netrom USERS command) to
issue a connect request to a user on the node. Your connect request was
then processed back thru the network to the users home station. To do the
same thing with netrom, one has to manually backtrack the user to his entry
point, then connect to him. The autorouter would allow one to connect to
destination nodes as well. In all of this, the connect sequence used
digipeat terminalogy. I.e., C <call> via <call/alias>.

Suspect one of the reasons I had good feelings about FlexNet is the network
backbone was mostly hidden transmitter-free full-duplex 9k6 links and it was
pretty easy to move around. Unfortunately by the time I discovered the
Swiss wormhole the word was out to the ax.25 users in europe and they were
overloading the RF end in Canada, so the hole was plugged. As a result was
able to only explore FlexNet for 2-3 hours.   What tipped me off was all of
the europeans spotted on our local VHF networks and I traced them back thru
the worm.

I believe there were one or two articles on FlexNet in past CNCs but don't
recall seeing a disclosure on the protocol. Has anyone seen the FlexNet
protocol and could give us a summary as to its advantages and disadvantages?

73 de Jack

185. Re: [NETSIG:1584] FlexNet (was acl/digipeating)

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 17 Jul 1995 19:30:25 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507180030.TAA01686@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to Jack Taylor:
>
> I believe there were one or two articles on FlexNet in past CNCs but don't
> recall seeing a disclosure on the protocol. Has anyone seen the FlexNet
> protocol and could give us a summary as to its advantages and disadvantages?
>

Just searched the DCC/CNC Abstracts.
Abstract search is available on http://www.tapr.org/tapr

You will find these useful below. Tha
radios are the real key to suucess...although ther per-site cost is
extermmly high since they have all one-to-on node connections. So, some of
there sites have lots of money tied up in ports (channel element, radios,
antenna).   One reason for including the radio articles in the search.

I have also played with the network when I was in Germany.
TexNet and FlexNet are very similar in overall operations. The real
advantage of the FlexNet system is the radios that were designed for the
system on 1.2G. Wolf-Henning Rech, N1EOW/DF91C, has been a real key to its
success. I talked to Rech and Guther at the Tampa DCC about bringing the
kits into the US, but nothing ever came of it.

TAPR has been working with CAPRA to order kits for the 1.2G radios. These
orders will be placed shortly...if you are interested contact Carl Bergstead
cberg@grayfox.svs.com -- he is arrange the order. Money is being collected
by TAPR. Very experimental.

Anyway here is the abstracts:

   This abstract is found in cnc11.html

The German (Central European) Packet Radio Network: An Overview
by Wolf-Henning Rech, N1EOW/DF91C, and Johannes Kneip, DG3RBU
       Abstract: Packet radio operation in Europe made its beqinnings in
larger scale in the mid-80s. First
access was made in the two-meter-band, but soon the sinqle available channel
(144,675 MHz) used to be
overcrowded in densely populated areas. Because there is significantly less
space for amateur radio frequencies
in Europe our packet radio network was successfully estabilshed in the 70cm
and 23cm band during the last 8
years. Tab.1 summarizes an overview of German frequency allocation for
amateur radio and its packet radio
usage between 50 and 2000 MHz; requlations in other European countries is
similar but more restricted at most.

   This abstract is found in cnc12.html

A Low Cost Transceiver for 19.2 kb/s FSK Transmission in the 23 cm Band
by Wolf-Henning Rech, N1EOW/DF91C
       Abstract: Why 23 cm ? Why not ? Yes, it is well known that many
packeteers become quite unsure
when they see a circuit diagram full of obvious short circuits (some people
call them strip lines) connected to
parallel capacitors - what a nonsense ! And why to use even discrete
transistor stages instead of the fine HCMOS
inverters ? Speaking about microwave transmitters finally cause the complete
panic, and everyone assures that he
has nor a lathe neither a network analyser at hand. But, don't panic! 23 cm
isn't yet so exotic as you may think
perhaps. A lot of good semiconductors and other components are available at
low prices, and with a
well-designed printed circuit board the assembly is nearly as easy as for a
TNC. Yes, there are some special
rules to care, but they are few and simple.

   This abstract is found in cnc13.html

FSK Modem with Scaleable Baud Rate
by Wolf-Henning Rech, N1EOW, and Gunter Jost, KD7WJ
       Introduction: Binary FSK modulation of the RF carrier is a well known
and widely used transmission
scheme for digital information. Old RTTY modems are the first example in
amateur radio; nowadays packet radio
is the most prominent FSK application. The advantage of FSK is compatibility
with existing FM voice radios
and simple implementation, including robustness against misalignment, bad
transmission characteristics of the
radios, or frequency drift. More sophisticated RF modulation schemes are
rarely used until now. Combined with
coding techniques they could provide more efficient use of the RF bandwidth
at low SNR but need very careful

construction of both modem and transceiver. Subcarrier modulation
techniques, like APSK or AQPSK, are
disadvantegous in respect to RF bandwidth and SNR.

Well-known amateur radio FSK modem concepts are those of K9NG and
G3RUH which both use an
additional scrambler with the polynomial l+x12+xl7. Their implementations
are different in detail but basically
compatible at the air interface. G3RUHs filtering is more sophisticated with
an EPROM hard-coded FIR filter in
the transmitter to achieve best spectral purity without alignment.

Both are designed for 9.6 kbaud, need an RF bandwidth of about 20 kHz
and work fine with IF filters
down to 15 kHz. They can be modified to other baud rates by changing a large
number of parts in the analog
filters and using another clock frequency. This can be useful to double the
speed to 19.2 kbaud with slightly
modified radios with 30 kHz IF bandwidth, or even more with broader IFs,
like broadcast type WBFM circuits.

We have improved the G3RUH modem keeping in mind the idea of simple
baud rate scalability through
the clock frequency [1,2]. This task can be solved by replacing the analog
filters through switched-capacitor
circuits combined with a completely digital DCD circuit. To care for
birdies, broadband noise and other 'alias'
effects of time discrete filter circuits some analog anti-aliasing filters
are added which restrict the scalability to a
range of 1:8 in baud rate, e.g. from 9k6 to 76k8.

186. G8BPQ TXD .... HELP!!!!

From: zephd@iquest.net (Dave Zeph)
Date: Tue, 18 Jul 1995 01:01:12 +0000
To: netsig@tapr.org
Message-ID: <m0sY13K-000B6hC@dorite1.iquest.net>
Rendered body type: text/plain

I'm having absolutely no luck trying to run ordinary TNC-2 in KISS with
G8BPQ. The problem appears that the TXD parameter is never passed to the TNC.

Here's the setup:

1) 486DX-33 (Have tried a second computer)
2) Ordinary RS0232 Serial Port (Have tried two other serial port cards)
3) Store bought cables (Have tried 3-wire cable)
4) MFJ 1270C (Have tried MFJ-1270B and two PacComm Tiny-2's)
5) Using V4.08A BPQ (Have Tried V4.06K)
6) Using SWITCH.EXE (The "Node Only" version of G8BPQ - Have Tried BPQCODE.EXE)
7) Have tried Terminal Baud Rates from 1200 baud to 19.2Kb
8) Running 1200 baud Radio Baud Rate with Internal Modem

I can detect absolutely NO CHANGE in TXD. I've varied it from 1 to 1000 in
the BPQCFG.TXT with no effect. I know it can take 5-15 minutes to change.

A BBS Sysop tried the 1270C with his BBS and the TXD parameter was changed
properly. I haven't been able to get it to change AT ALL.

The reason it's so important is because I need to be able to run fast TXD's
with some new 9600 baud gear. I have been running G8BPQ for years, sysop
four Clusters running BPQ, and sysop three Data Engines running BPQ. I
haven't been been so STUMPED or FRUTRATED in many a year!

Below is a copy of my test BPQCFG.TXT file with a lot of the verbage removed
to keep the message short. (I've even tried using the BPOQCFG.TXT supplied
by G8BPQ!) If anyone has ANY IDEA of what might be causing my problem, I
would be forever grateful. Too many people are running BPQ with TNC-2's and
not having problems, so I must be doing something really stupid.

Thanks .... Dave

```
--------------------
;
;    CONFIGURATION FILE FOR G8BPQ SWITCH SOFTWARE
;
DESQVIEW=0
HOSTINTERRUPT=127
;
```

```
;
;
EMS=0                    ; dont use EMS RAM
;
;
;    Station Identification.
;
;
NODECALL=W9ZRX-3           ; NODE CALLSIGN
NODEALIAS=INTEST           ; NODE ALIAS
;
BBSCALL=W9ZRX-3            ; BBS CALLSIGN
BBSALIAS=INTEST            ; BBS ALIAS
;
;    'ID' MESSAGE - SENT EVERY IDINTERVAL MINS
;
IDMSG:
Network node (INTEST)
Test Link, Westfield IN
***
;
UNPROTO=MAIL             ; DEFAULT UNPROTO ADDR

;    'I' COMMAND TEXT
;
INFOMSG:
Test Link
***
;
CTEXT:
This Is Not A User Access Node - PLEASE DISCONNECT IMMEDIATELY
***
FULL_CTEXT=0
;
;
;    Network System Parameters
;
OBSINIT=5                ; INITIAL OBSOLESCENCE VALUE
OBSMIN=3                 ; MINIMUM TO BROADCAST
NODESINTERVAL=30         ; 'NODES' INTERVAL IN MINS
IDINTERVAL=1             ; 'ID' BROADCAST INTERVAL
;
BTINTERVAL=0             ; NO BEACONS
L3TIMETOLIVE=25          ; MAX L3 HOPS
L4RETRIES=3              ; LEVEL 4 RETRY COUNT
;
L4TIMEOUT=60             ; LEVEL 4 TIMEOUT
L4DELAY=1                ; LEVEL 4 DELAYED ACK TIMER
L4WINDOW=4               ; DEFAULT LEVEL 4 WINDOW
;
MAXLINKS=30              ; MAX LEVEL 2 LINKS (UP,DOWN AND INTERNODE)
MAXNODES=200             ; MAX NODES IN SYSTEM
MAXROUTES=10             ; MAX ADJACENT NODES
MAXCIRCUITS=50           ; NUMBER OF L4 CIRCUITS
MINQUAL=90               ; MINIMUM QUALITY TO ADD TO NODES TABLE

BBSQUAL=255              ; BBS Quality relative to NODE

BUFFERS=255              ; PACKET BUFFERS
;
;    TNC DEFAULT PARAMS
;
PACLEN=236               ; MAX PACKET SIZE
;
TRANSDELAY=1              ; TRANSPARENT MODE SEND DELAY - 1 SEC
;
;    Level 2 Parameters
;
T3=180                    ; LINK VALIDATION TIMER (3 MINS)
IDLETIME=900              ; IDLE LINK SHUTDOWN TIMER (15 MINS)
;
;    Configuration Options
;
BBS=0                    ; Not used in Data Engine version
NODE=1                   ; INCLUDE SWITCH SUPPORT
;
HIDENODES=1
;
ENABLE_LINKED=N
```

```
;
;    'COMBIOS' Port definitions.
;
;    This section defines the virtual TNC's that the code supports.
;
;    The Data Engine only allows one TNC2-Like Virtual TNC
;
;
;    AX25 PORT DEFINITIONS
;
PORT
    ID=BPQ KISS Test
    TYPE=ASYNC
    PROTOCOL=KISS
    IOADDR=3F8H
    INTLEVEL=4
    SPEED=9600
    CHANNEL=A
    QUALITY=1
    MAXFRAME=7
    TXDELAY=50
    SLOTTIME=30
    PERSIST=255
    FRACK=2000
    RESPTIME=1000
    RETRIES=10
    PACLEN=236
    VALIDCALLS=W9ZRX
ENDPORT
;
ROUTES:
;
;    ROUTES TO LOCK IN
;
W9ZRX-4,255,1
***
;
APPLICATIONS=*SYS
;

**************************************************************************
Dave Zeph, W9ZRX
Home     : (317) 896-3876
FAX/Data : (317) 867-1809
E-Mail   : zephd@iquest.net
```

187. Re: [NETSIG:1584] FlexNet (was acl/digipeating)

From: srbible@cs.nps.navy.mil (Steven R. Bible)
Date: Mon, 17 Jul 95 18:10:57 PDT
To: netsig@tapr.org
Message-ID: <9507180110.AA17851@taurus.cs.nps.navy.mil>
Rendered body type: text/plain

```
>I believe there were one or two articles on FlexNet in past CNCs but don't
>recall seeing a disclosure on the protocol.  Has anyone seen the FlexNet
>protocol and could give us a summary as to its advantages and disadvantages?


>From TAPR's newly created Computer Networking Conference Abstracts web pages
and search capability (say that five times fast :-), here is what a search
on "flexnet" turned up...

-------------------------------------------------

- This abstract is found in cnc09.html

FlexNet - The European Solution
by Gunter Jost, DK7WJ, and Joachim Sonnabend
      Abstract: This paper describes the design and implementation of
FlexNet.  This is a packet switch software with a complete new design made
in Germany. It is beginning to become the standard in Central Europe.
Running on a dedicated hardware with an unique design it is easy to put
cheap and reliable packet switches on our mountain sites.

-------------------------------------------------

To see these pages for yourself goto:

   http://www.tapr.org/tapr/html/cncindex.html
```

73,

Steve, N7HPR

srbible@cs.nps.navy.mil
Naval Postgraduate School, Monterey, CA 93943
 - - - - -
K6LY NPSARC - http://www.sp.nps.navy.mil/npsarc/k6ly.html
Web Ground Station - http://gndstn.sp.nps.navy.mil
Amateur Spread Spectrum - http://www.sp.nps.navy.mil/ss

188. Re: [NETSIG:1581] Re: APRS over net/rom ?

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Tue, 18 Jul 1995 00:44:13 -0300
To: netsig@tapr.org
Message-ID: <199507180344.AAA12361@bud.peinet.pe.ca>
Rendered body type: text/plain

de w0rli:
>How does this help? The beacon would be transmitted on the backbone
>frequencies and would never be seen by any users. What I need is a
>real basic idea of how APRS is used.
>
>
OK I'm no expert on ARPS and since no one else has jumped in, here's what I know
about it. I have seen it working and we have a gateway station that
re-transmits
it near here so I see its beacons.

Its very simple beaconing where the beacon usually includes the station
lat/long and other information. The beacons are sent using regular callsigns
in the digi path as well as 2 special Alias. (I'm not positive on these
details.)

The Alias GATE is used to digipeat from the HF channel across to the VHF channel
or vice versa. (30M is popular, I can look up frequencies of someone wants it)

The trick is that there may be dozens of stations on that HF channel that have
their digipeat Alias set to GATE and all hearing the original beacon and
cross-band digipeating (KAMs are handy here) onto VHF or wherever.
On the VHF side, some ARPS digi stations use the Alias WIDE (for Wide coverage
I guess) and here again there may be many which may hear and digipeat this
beacon and so on, and so on.
So basically a lot of digipeating. The ARPS program has a global map that
reads the Lat/Long, callsign etc from the ARPS beacon and displays it on a
map...a poor
mans GPS of sorts.
They also beacon WX info which can trigger the display of special symbols for
storms, hurricanes etc.

Thats about all I know about it in a nutshell. I hope I've explained
properly what
I mean about the multiple GATE & WIDE Aliases.

73 - Ron VE1AIC

189. Re: [NETSIG:1579] Re: Networks real and imagined

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 17 Jul 1995 20:46:39 -0700
To: netsig@tapr.org
Message-ID: <199507180355.WAA11237@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

On this "issue" of the internet, there are multiple reasons for hams making
use of it. As for retaining and building the HF forwarding network, Hank,
in my view, is right, it is imperilled. Regardless of how we look at the
internet resource, NOW is the time to analyze this problem in a practical
way and offer positive solutions.

One suggestion put forth was to cut down on the volume of bulletins with the
intent of reducing network congestion. Arguments that this constitutes
censorship or that it's good to "stress" the network aside, traffic
reduction is a viable approach. (Kinda like the practice of throwing all
excess cargo out so the plane won't crash when the wings ice up.) Indeed,
traffic reduction may be the MOST viable approach. In terms of dollars out
of pockets, it doesn't cost anything. It'll even put money in the pockets
of sysops in terms of less equipment wear and electric bills.

Sure, out of the total packet population there may be a small percent who would miss their daily joke message or the chance to hurl insults on a debate issue. That's to be expected. But we really don't have a way to analyze user interests to any degree of accuracy. For the most part bulletins come and go automatically without attention. Most sysops have another life and not too much attention is paid to user preferences. If it turns out I'm wrong and the majority of the users wants jokes and insults, then perhaps it's time to re-examine the purpose of the BBS function <grin>.

However, based on my observations of the local BBS over the years, it is vastly underutilized. Awhile back our main forwarding station went away for two or three weeks. Bulletin traffic came to a halt, but personals still arrived. After two weeks only one ham asked "What happened to the bulletins?" This incident along with noticing the practice of most users to just use the BBS for personal mail purposes is to my mind, significant.

In the business world, when a company is performing a non profitable service that the majority of customers don't use, sooner or later management is going to review that practice. All I'm suggesting here is a review be made of how many local users are *really* reading the bulletins, and of which category.

There are other network steps that can be taken in the hope of modifying the trend to use the internet. Unfortunately, none are as inexpensive as traffic reduction.

Upgrading our local networks to better handle traffic volumes cost dollars and, even if done, would tend to benefit local internet gateway traffic as well. Even so, upgrades will continue and we need to seek the most effective way to do it.

I've asked for HF forwarding stats so's to determine the capacity to handle the current volume plus an increase. In other words, is there a limitation on HF that is driving the move to internet forwarding? If there is, then perhaps collectively we can find a solution. As of yet, there has been limited information presented. Regardless of whether or not the concensus is that bulletin traffic continue unabated, we should attempt to analyze the HF resource in an effort to maximize its capacity and to determine its eventual break point.

One alternative to HF forwarding mentioned on this group previously is that of 6M meteor-scatter. My early optimisim on this has faded a little bit. All indications are that it's still do-able though. For reasonable throughput rates it's beginning to look like a sophisticated station will be required. Instead of 100 watt simplex SSB radios for a 200 WPM average data rate, a report I read today was talking 1 KW and a full-duplex configuration yielding 100 WPM average. On the positive side, 100 WPM average comes out to around 20 megs of data per month. LZW compression would increase this by approximately 40 percent.

The potential of this type of channel capacity isn't to be sneezed at and approximates the 12,000 msg count per month that W0RLI has. The report did say significant thoughput improvement could be made by software protocol changes which allow an adaptive variable data rate. I'm still excited about the potential of this mode, but it's unfortunately not an instant solution. It will take a couple of folks to set up a link and experiment with if it's to get off the ground.

Didn't mean to get so long-winded on this topic. Hopefully some will find it of use and be able to build on the above with their reasoned suggestions. Remember, the issue is "What can we do to make ham radio networking a more desirable alternative than the internet?"

73 de Jack

190. Re: [NETSIG:1587] Re: FlexNet (was acl/digipeating)

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Tue, 18 Jul 1995 13:55:29 +0200
To: netsig@tapr.org
Message-ID: <199507181154.NAA18499@unix10.pressimage.fr>
Rendered body type: text/plain

HI

>> Has anyone seen the FlexNet protocol and could give us a summary as to its advantages and >>disadvantages?

Yes. I am not living in a Flexnet Area, but not too far from this network,

and i'm working to make it grow in my direction (south France). Flexnet is
now running mainly in Center Europe: Germany, Switzerland, Belgium,
Denmark... and some parts of France.

The switch is one of the best system i've ever seen. It has several
improvements compared to others. Unlike ROSE or similar, it does no
hierarchical adressing, but exchanges node tables all over the network. Node
tables include "Round Trip Time", so each switch will choose the faster path
to build the connection.

Example of syntax: C F1xyz V F1abc, F1def.
F1xyz is the station you want to connect, F1abc is your local node, and
F1def the destination node.

No adress in that system. As a node often has more than 1 user frequency,
the node that gets a call for F1abc will look for him in its last heard
table. It is also possible to send a "find" command, that will make the
final node looking for the station on all user frequencies.

There is also some other things (conferencies with 255 channels...) but i
won't detail them here.

Flexnet switch runs on "Flexnet type" networks. To sum up the principles:
        One swith
        User access(es) frequency(ies)
        One frequency for each neighbour Flexnet node or application (BBS,
Cluster...)
That makes each node a "star" linked to others.

>FlexNet - The European Solution
>by Gunter Jost, DK7WJ, and Joachim Sonnabend
>   Abstract: This paper describes the design and implementation of
>FlexNet. This is a packet switch software with a complete new design made
>in Germany. It is beginning to become the standard in Central Europe.
>Running on a dedicated hardware with an unique design it is easy to put
>cheap and reliable packet switches on our mountain sites.

It was requiring a dedicated hardware, but recently the switch appeared as a
PC software. It is still a beta test version but i'm running it here, and it
seems to be reliable !

The software uses drivers for different hardware (USCC cards with 4 or 8
modems, Baycoms, Serial links, IPX...sound cards !)

Some add-ons are waited, like IP router...

It can even run on the same machine that a (little) BBS, or can emulate TF
firmware to provide a local terminal (using any TF software).

Well. I hope that readers of this SIG will be interested, as IMHO, this
system should is not known enough.

In France, for example, we're still running our PC ROSE switch (FPAC)...
Let's hope that the new PC/Flexnet will replace it soon.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
       > F1JKJ@planete.net <   Public Key on mail servers
         Fidonet 2:323/27.1
         Compuserve ID 100407,436

191. Re: [NETSIG:1589] Re: Networks real and imagined

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 18 Jul 1995 05:58:59 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950718055616.15572E-100000@acca>
Rendered body type: text/plain

On Mon, 17 Jul 1995, Jack Taylor wrote:

        snip....

> One alternative to HF forwarding mentioned on this group previously is that
> of 6M meteor-scatter. My early optimisim on this has faded a little bit.
> All indications are that it's still do-able though. For reasonable
> throughput rates it's beginning to look like a sophisticated station will be
> required. Instead of 100 watt simplex SSB radios for a 200 WPM average data
> rate, a report I read today was talking 1 KW and a full-duplex configuration
> yielding 100 WPM average. On the positive side, 100 WPM average comes out
> to around 20 megs of data per month. LZW compression would increase this by

> approximately 40 percent.
>
> The potential of this type of channel capacity isn't to be sneezed at and
> approximates the 12,000 msg count per month that W0RLI has. The report did
> say significant thoughput improvement could be made by software protocol
> changes which allow an adaptive variable data rate. I'm still excited about
> the potential of this mode, but it's unfortunately not an instant solution.
> It will take a couple of folks to set up a link and experiment with if it's
> to get off the ground.
>
> Didn't mean to get so long-winded on this topic. Hopefully some will find
> it of use and be able to build on the above with their reasoned suggestions.
> Remember, the issue is "What can we do to make ham radio networking a more
> desirable alternative than the internet?"
>
> 73 de Jack
>
>
>   Well Jack, we also must find 2 hams willing to try scatter on 6
meters and also DO NOT HAVE TV CHANNEL 2 IN THE AREA....hi   >
>

-karl

>
>
>
>
>
>
>

192. Re: [NETSIG:1590] Re: FlexNet (was acl/digipeating)

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 18 Jul 95 08:43:41 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c3e@ram.net>
Rendered body type: text/plain

>The switch is one of the best system i've ever seen. It has several
>improvements compared to others. Unlike ROSE or similar, it does no
>hierarchical adressing, but exchanges node tables all over the network. Node
>tables include "Round Trip Time", so each switch will choose the faster path
>to build the connection.

Isn't the node table a problem as you get a larger network, what happens when
the node table is full? Hierarchical addressing allows for networks of
unlimited size.

>
>Example of syntax: C F1xyz V F1abc, F1def.
>F1xyz is the station you want to connect, F1abc is your local node, and
>F1def the destination node.

This is just like ROSE, but without the problem of F1DEF moving and having
the callsign change and blowing up all the BBS connect scripts...

>
>No adress in that system. As a node often has more than 1 user frequency,
>the node that gets a call for F1abc will look for him in its last heard
>table. It is also possible to send a "find" command, that will make the
>final node looking for the station on all user frequencies.

This is nice.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

193. Re: [NETSIG:1572] APRS over net/rom ?

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 18 Jul 95 08:47:53 EDT
To: netsig@tapr.org

Message-ID: <15021573.1c3f@ram.net>
Rendered body type: text/plain

>Some local folks recently posed this question:
>
>How to set up net/rom and g8bpq switches to pass APRS beacons.
>
>Can anyone shed some light on this one?
>
>How do you do it in your part of the network?
>
>   ... Hank

It is done on the east coast with a series of good ole digipeaters and 4-6
digi callsigns.

I am working on Broadcast groups for ROSE so that a UI frame can be sent to a
destination callsign at a specific switch callsign and have it forwarded out
a specific list of user ports.

This is not just for APRS, but could be used for ARP, IP as well as Bulletin
forwarding using any of the defined Broadcast protocols.

to

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

194. Re: [NETSIG:1580] RE: ACL/digipeating

From: Gary McDuffie <mcduffie@hannibal.wncc.cc.ne.us>
Date: Tue, 18 Jul 1995 07:50:29 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507180715.A26685-0100000@hannibal>
Rendered body type: text/plain

On Mon, 17 Jul 1995, Chuck Hast wrote:

> Hank, using ROSE is sort of like using the telphone, but instead
> of having to pick up the hand piece or hit the speakerphone button
> and THEN dial the distant number, you do it all in one connect line.
>
> Example:
> I want to connect to wb5cqu out in Double Oak Tx. I would issue a
> connect like this
>
> C wb5cqu v k0zxf-9 817491
> | | |---------------Distant Switch Address
> | |-----------Local Switch Callsign
> |-------------Target call to whom I am connecting.

This may be a so-what question, but it might help Hank with one that he
had. In all of the addressing explanations I've heard lately, one thing
has been distinctly missing. In the old days, ROSE addressing was by
area code and prefix. Has this changed, or is it being carefully avoided
for some not-obvious-to-me reason? In the example above, 817491 would
imply that it was area code 817 and prefix 491. To a certain extent,
this answers the question of how to know where to route. The phone book
is certainly easier to come by than something as unuseful as
grid-squares.

It obviously makes no difference how the numbers are derived. It just
makes it easier to make sense of them if you know they stand for something.

Gary

195. Re: [NETSIG:1594] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 18 Jul 95 10:29:11 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c41@ram.net>
Rendered body type: text/plain

>On Mon, 17 Jul 1995, Chuck Hast wrote:
>
>> Hank, using ROSE is sort of like using the telphone, but instead
>> of having to pick up the hand piece or hit the speakerphone button

```
>> and THEN dial the distant number, you do it all in one connect line.
>>
>> Example:
>> I want to connect to wb5cqu out in Double Oak Tx. I would issue a
>> connect like this
>>
>> C wb5cqu v k0zxf-9 817491
>>     |        |       |---------------Distant Switch Address
>>     |        |------------Local Switch Callsign
>>     |-------------Target call to whom I am connecting.
>
>
>This may be a so-what question, but it might help Hank with one that he
>had.  In all of the addressing explanations I've heard lately, one thing
>has been distinctly missing.  In the old days, ROSE addressing was by
>area code and prefix.  Has this changed, or is it being carefully avoided
>for some not-obvious-to-me reason?  In the example above, 817491 would
>imply that it was area code 817 and prefix 491.  To a certain extent,
>this answers the question of how to know where to route.  The phone book
>is certainly easier to come by than something as unuseful as
>grid-squares.
>
>It obviously makes no difference how the numbers are derived.  It just
>makes it easier to make sense of them if you know they stand for something.
>
>
>Gary

Exactly Right.

I am also working on answers to Hank's other questions...

____________________________________________
Thomas A. Moulton, W2VY     RAM Mobile Data
w2vy@ram.net                (908) 602-5227
```

196. Re: [NETSIG:1586] G8BPQ TXD .... HELP!!!!

From: paul@paccomm.com
Date: Tue, 18 Jul 95 11:11:03 UTC
To: netsig@tapr.org
Message-ID: <1060@paccomm.com>
Rendered body type: text/plain

```
A-ha!
Yet another report of the same problem with TXD in BPQ.
It appears that it's not platform related or even KISS code related
(BPQKISS, KISS and PacComm KISS mode all do the same thing).
I wrote to John reporting other problems with link-loss in
a BPQ-BPQ setup. No reply yet......

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~     .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \______________/
                                                    ~~~~~~~~~~~~~~~~~~~~~~~
```

197. Re: [NETSIG:1594] RE: ACL/digipeating

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 18 Jul 1995 11:16:48 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507181119.C2277-0100000@gateway.utilpart.com>
Rendered body type: text/plain

```
On Tue, 18 Jul 1995, Gary McDuffie wrote:

>
>
> On Mon, 17 Jul 1995, Chuck Hast wrote:
>
> > Hank, using ROSE is sort of like using the telphone, but instead
> > of having to pick up the hand piece or hit the speakerphone button
> > and THEN dial the distant number, you do it all in one connect line.
> >
```

> > Example:
> > I want to connect to wb5cqu out in Double Oak Tx. I would issue a
> > connect like this
> >
> > C wb5cqu v k0zxf-9 817491
> > | | |---------------Distant Switch Address
> > | |------------Local Switch Callsign
> > |-------------Target call to whom I am connecting.
>
>
> This may be a so-what question, but it might help Hank with one that he
> had. In all of the addressing explanations I've heard lately, one thing
> has been distinctly missing. In the old days, ROSE addressing was by
> area code and prefix. Has this changed, or is it being carefully avoided
It still is though we have taken to using some special non-CO numbers for
dedicated applications ect. For instance, a BBS here in the Tampa area
has a address of 813105... It belongs to a repeater group which runs a
repeater on the 147.105 mhz freq. Sooo, since it is on a dedicated address
and does not cover a area associated with a telco exchange, we have used
the 105 address to aid in association.

> for some not-obvious-to-me reason? In the example above, 817491 would
> imply that it was area code 817 and prefix 491. To a certain extent,
> this answers the question of how to know where to route. The phone book
> is certainly easier to come by than something as unuseful as
> grid-squares.
Yes, it is, and I took it one step beyond showing the DNIC which is a ITU
assigned address, there are one or more per country. The example given with
the VK shows this additional address. 505 being the VK Country Code and the
added 0 is the network identifier, which by the way could be used for a large
number of network segregations within a physical network.

>
> It obviously makes no difference how the numbers are derived. It just
> makes it easier to make sense of them if you know they stand for something.
Yes you are certainly right Gary. In most cases the network people running
ROSE have tried to stay with the word of the ITU recommendations. In general
they recommend that the addressing plan follow the PTT or whatever authority
national network addressing plan or if there is none, which appears to be the
case in the USA, to follow the telphone network plan.

And in following these customs, most ROSE networks have established 411 and
555 with the local area code prefix as the known information addresses.

The custom is to connect to INFO @ nnn411 or nnn555 where nnn = area code
of interest.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
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Aplicando la radio al mundo de la comunicacion digital, extendiendo el
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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

198. [NETSIG:1469] 2M/440 Off the shelf Radio for 9k6? -Reply

From: Orville Beach <Orv@micom.com>
Date: Tue, 18 Jul 1995 09:04:14 -0800
To: netsig@tapr.org
Message-ID: <s00b79bf.011@micom.com>
Rendered body type: text/plain

Marv, a recent copy of QST evaluated all the 'off
the shelf' ham transceivers that claimed to be
'9600-ready'.   If you haven't seen it already,
it's well done and worth reading.

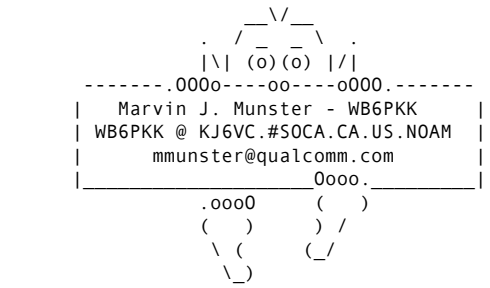
73 - Orv - wb6wey
p.s. WM6P told me about Sherry's drive off a

150-foot cliff! How's she doing? [you don't have
to answer to the listserver!! :-)   ]

>>> Marvin Munster x5388 <mmunster@qualcomm.com>
07/11/95 10 12am >>>
I would like some input on an off the shelf radio
that works BEST without conversion for 9k6 bps. I
would like either individual or dual band radios
for 2M and 440.

I know that there has been lots of discussion on
this subject, and it, as most things, remains very
subjective. No matter what you bought, you are
going to defend it to the death, even if it wrong,
because you made the decision, and you will never
admit to making a mistake. Any way, my point is
that all of the discussion that I have read has not
been very clear. I am looking for information
like..."I tried this and did everything correctly
and the damn thing still won't work properly with
out tweaking."

All information welcome.



199. Re: [NETSIG:1563] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 18 Jul 1995 11:56:50 -0500
To: netsig@tapr.org
Message-ID: <199507181656.LAA22026@ns1.texoma.com>
Rendered body type: text/plain

>On Sun, 16 Jul 1995, Charles Brabham wrote:
>
>> That's [new packeteers brought on by new RF nodes - hg] all I need to know,
>> to develop a strong preference for terrestrial RF
>> networks over wireline links. (Even if you ignore the fact that wire-lines
>> simply are NOT ham radio.)
>
>Would it be fair to say Charles that you prefer having no connectivity to
>having some connectivity with carriage by commercial means?
>
>Howie
>

I'll assume here that the buzz word "connectivity" has it's usual
implication.. Long-distance, high-speed links which cannot currently be
achieved with RF, and are only needed in order to use ONE protocol which has
proven itself (for this very reason) to be fundamentally unsuitable for
Ham Radio applications - TCP/IP..

Yes, Howie; I'd say that NO "connectivity" is MUCH better than having ANY
amount of "connectivity" by commercial means, when this is considered as a
Ham Radio issue.

It amounts to hams being so concerned about using a networking protocol
which is unsuitable for RF that they are willing to QUIT USING RF to do so
-- But they still want it to be called "ham radio".

Think about it.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Philosophers must ultimately find thier true perfection

in knowing all the follies of mankind by introspection.

200. Re: [NETSIG:1565] RE: ACL/digipeating

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 18 Jul 1995 11:57:07 -0500
To: netsig@tapr.org
Message-ID: <199507181657.LAA22041@ns1.texoma.com>
Rendered body type: text/plain

>
>
>Lets not forget that Digipeat was dropped from TheNet 2.10 for some of
these same reasons and for
>the most part that version never recieved wide acceptance. Mostly because
of the lack of
>digipeat. In highly covered areas I'm sure that a node disappearing causes
few problems and the
>system just routes around it. However in this area if a node goes out your
choices are either
>digipeat thru someone to get to the closest node, or you just don't make
it. Considering this
>and the fact that packet is being used more and more in disaster recovery
operations, what is the
>possibility that you will need the digipeat function just to get the
traffic thru?? The current
>implimentation of digipeat control in TheNet x1j works well. It gives the
sysop to turn digipeat
>off all together, not at all, or to restrict it usage to selcted parties
via the acl command. It
>also has the ability to be turned back on IF NEEDED. So IMHO removing it
from the code is
>shooting ourselves in the foot in emergency communications.
>
>>John Moyers N4QEA
>

Your arguement overlooks the fact that xij IS a node, John. If an xij node
is there, that implies that the node is availabe as a node -- So whay
digipaet through it?

The only reason I can see to keep the digi function is to support software
which REQUIRES it, as ROSE does. Compatability is a more important
consideration than getting rid of obsolete functions, if it comes down to a
choice between the two.

On the other hand, I think it would be smart to try to find a way AROUND
this need for the digipeat function in ROSE, and any other application which
currently requires it.

In general, I find digipeating in node software to be undesirable. We should
put some effort into getting away from it.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Philosophers must ultimately find thier true perfection
in knowing all the follies of mankind by introspection.

201. Re: [NETSIG:1586] G8BPQ TXD .... HELP!!!!

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 18 Jul 95 10:26:59 PDT
To: netsig@tapr.org
Message-ID: <9507181026.ZM8899@hanko>
Rendered body type: text/plain

On Jul 17, 8:12pm, Dave Zeph wrote:
> Subject: [NETSIG:1586] G8BPQ TXD .... HELP!!!!
> I'm having absolutely no luck trying to run ordinary TNC-2 in KISS with
> G8BPQ. The problem appears that the TXD parameter is never passed to the
TNC.
>
>
> Here's the setup:
>
> 1) 486DX-33 (Have tried a second computer)
> 2) Ordinary RS0232 Serial Port (Have tried two other serial port cards)
> 3) Store bought cables (Have tried 3-wire cable)
> 4) MFJ 1270C (Have tried MFJ-1270B and two PacComm Tiny-2's)

> 5) Using V4.08A BPQ (Have Tried V4.06K)
> 6) Using SWITCH.EXE (The "Node Only" version of G8BPQ - Have Tried
BPQCODE.EXE)
> 7) Have tried Terminal Baud Rates from 1200 baud to 19.2Kb
> 8) Running 1200 baud Radio Baud Rate with Internal Modem

Do you use the BPQ supplied KISS EPROM image in the TNC?
Some versions of KISS don't handle the TXD change properly.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

202. Re: [NETSIG:1593] Re: APRS over net/rom ?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 18 Jul 95 10:32:04 PDT
To: netsig@tapr.org
Message-ID: <9507181032.ZM8948@hanko>
Rendered body type: text/plain

On Jul 18, 8:03am, Tom Moulton wrote:
> Subject: [NETSIG:1593] Re: APRS over net/rom ?
> >Some local folks recently posed this question:
> >
> >How to set up net/rom and g8bpq switches to pass APRS beacons.
> >
> >Can anyone shed some light on this one?
> >
> >How do you do it in your part of the network?
> >
> >   ... Hank
>
> It is done on the east coast with a series of good ole digipeaters and 4-6
> digi callsigns.
>
> I am working on Broadcast groups for ROSE so that a UI frame can be sent to a
> destination callsign at a specific switch callsign and have it forwarded out
> a specific list of user ports.
>
> This is not just for APRS, but could be used for ARP, IP as well as Bulletin
> forwarding using any of the defined Broadcast protocols.

Interesting. Wrote a small program for bpq last night that does
almost exactly what you suggest: allows specification of digi in
to digi out routing by destination and switch port. It allows us
to at least see some aprs activity across the network here.

Can't do this for the Data Engine based bpq nodes of course ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

203. Re: [NETSIG:1594] RE: ACL/digipeating

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 18 Jul 95 10:39:26 PDT
To: netsig@tapr.org
Message-ID: <9507181039.ZM8954@hanko>
Rendered body type: text/plain

On Jul 18, 9:11am, Gary McDuffie wrote:
> Subject: [NETSIG:1594] RE: ACL/digipeating
>
>
> On Mon, 17 Jul 1995, Chuck Hast wrote:
>

> > Hank, using ROSE is sort of like using the telphone, but instead
> > of having to pick up the hand piece or hit the speakerphone button
> > and THEN dial the distant number, you do it all in one connect line.
> >
> > Example:
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> > C wb5cqu v k0zxf-9 817491
> > | | |---------------Distant Switch Address
> > | |------------Local Switch Callsign
> > |-------------Target call to whom I am connecting.
>
>
> This may be a so-what question, but it might help Hank with one that he
> had. In all of the addressing explanations I've heard lately, one thing
> has been distinctly missing. In the old days, ROSE addressing was by
> area code and prefix. Has this changed, or is it being carefully avoided
> for some not-obvious-to-me reason? In the example above, 817491 would
> imply that it was area code 817 and prefix 491. To a certain extent,
> this answers the question of how to know where to route. The phone book
> is certainly easier to come by than something as unuseful as
> grid-squares.
>
> It obviously makes no difference how the numbers are derived. It just
> makes it easier to make sense of them if you know they stand for something.

My problem with area code / exchange routing is that to make use of it
I must know the telephone exchange of the ham I wish to connect with.
Thus my question about address databases: where is this correspondence
stored and how do users access it. i.e. if I decide I'd like to connect
with n8qrm, how do I figure out how to do it. The way we have our network
setup, if n8qrm is "local" you just type C N8QRM. If he is "regional"
then you have to know roughly what major metro area is near and "source
route" your way there.

Yes, we do need to solve the hierarchical network address problem if we
are to create a viable wide area network, but no proposal I've seen to
date looks like it will actually solve that problem. All the proposals
require some sort of distributed directory service so users can look up
the address of other users. Seems to me the key to making a wide area
network work for hams requires this directory service to be transparent.

Don't tell me that tcp/ip solves the problem ... I know that it *can*
solve the problem, but have not seen any indication that the techniques
involved (orginizational and political) can be made to work in ham radio.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

204. Re: [NETSIG:1596] Re: G8BPQ TXD .... HELP!!!!

From: zephd@iquest.net (Dave Zeph)
Date: Tue, 18 Jul 1995 17:43:51 +0000
To: netsig@tapr.org
Message-ID: <m0sYGhI-000BDNC@dorite1.iquest.net>
Rendered body type: text/plain

Paul ... I'm the same fellow you talked to last week on the phone. One
workaround would be for me to program an EPROM with the DEFAULT KISS TXD set
to a more suitable value. From K3MC and KA9Q's paper I note that the
default TXD in the KISS Code is 50 (500ms) which is about what I'm hearing.

Would you be willing to give me the memory location of the Default
parameters in the KISS CODE for the PacComm 3.2.9.1 release??? I could then
program an EPROM with more suitable values and move forward.

At best this param is supposed to be updated every 5 minutes ... according
to N4XI at worst he's seen it take 30 minutes. At the N5AAA BBS it took 15
minutes for the TXD update to occur. I've been at this for years and given
the number of hours and gear that I've tried, I don't think it's anything

I'm doing here.

Since I note that KISS works without FLOW CONTROL, I'm going to try a 3-wire cable while jumpering the sppropriate pins at the computer connector. Also I'm going to try running BPQ from an ancient NEC Laptop (dual floppies - no hard drive). This is to see if it could be related to some differences in the signal he uses for timing.

There's no problem sending / receiving data .... just updating TXD (and possibly the other parameters)! So if you could tell me where they're located, I could at least make some headway.

Thanks .... Dave

>A-ha!
>Yet another report of the same problem with TXD in BPQ.
>It appears that it's not platform related or even KISS code related
>(BPQKISS, KISS and PacComm KISS mode all do the same thing).
>I wrote to John reporting other problems with link-loss in
>a BPQ-BPQ setup. No reply yet......
>
****
Dave Zeph, W9ZRX
Home   : (317) 896-3876
FAX/Data : (317) 867-1809
E-Mail   : zephd@iquest.net

205. Re: [NETSIG:1599] Re: Bulletins vs Mail

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 18 Jul 1995 12:55:22 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507181755.MAA31067@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to Charles Brabham:
> It amounts to hams being so concerned about using a networking protocol
> which is unsuitable for RF that they are willing to QUIT USING RF to do so
> -- But they still want it to be called "ham radio".
>

Charles,

How do 'you know' that what you are talking about is unsuitable for RF ?

Anyway - amateur radio is just like horse racing. Everyone can pick a a different horse.

This is the great aspect of the hobby.   This is the reason I like it. I have always been able to find people who have like interests and want to have fun.

Debates over AM vs SSB, RTTY vs Packet, etc, etc, etc have existed as long as amateur radio. Everyone should focus on what they like to do and don't worry about what others are doing. Amateur radio is changing -- big time. We are becoming a hobby of special interests...even more so than any time in the history of amateur radio. This is going to cause even wider splits between smaller numbers of amateurs particpating. This is only going to become worse as our specturm continues to shrink over the next 10 years.

Personally, I am going to continue to do stuff I like to do...this is a hobby. Life and useful spectrum is too scarce to worry about lots of the things I have seen debated over the last few weeks. I am going to go have fun at the UoSAT meeting.

The golden rule of amatuer radio is that "those who code and design -- rule" If you do not write code or develope hardware then you have no control in what is eventually going to happen. Pure and simple. The only way to have any control on what is available and is being implemented is to be the author or designer.

If someone designs a really cool system that provides great functions and uses Ether-air (not tropo) then many will switch and someone will not becuase it doesn't use long-waves.

Its just amateur radio.

Cheers - Greg, WD5IVD

--
One of these days I'll have to retire from school and get a real job :-)

206. Re: [NETSIG:1601] Re: G8BPQ TXD .... HELP!!!!

From: zephd@iquest.net (Dave Zeph)
Date: Tue, 18 Jul 1995 18:07:11 +0000
To: netsig@tapr.org
Message-ID: <m0sYH3r-000BDeC@dorite1.iquest.net>
Rendered body type: text/plain

Hank .... I've tried KISS in the PacComm Code, the latest MFJ Code that
ships with the 1270C, the TAPR 1.1.7b Code, the TAPR V1.1.8 Code, something
called KISS56 (supplied by John Ackerman - AG9V), and BPQ's JKISS EPROM ....
all with the same (nada) results. In all cases the TXD NEVER CHANGES.

KISS56 was developed for use with the Ottawa PI card and obviosuly has a
faster (but TOO FAST) a value of TXD.

Do you know the locations of the default TXD parameter in (any!) of the KISS
images. Accroding to K3MC and KA9Q's paper on KISS, they set the default
TXD to 50 (500ms) and that is what I am hearing.

I could EASILY program an EPROM with different default parameters (there's
only 3 or 4 in KISS) and work around this problem.

>Do you use the BPQ supplied KISS EPROM image in the TNC?
>Some versions of KISS don't handle the TXD change properly.
>
>   ... Hank
>
>
>
>--
>
>Hank Oredson @ Mentor Graphics   Library Operations
>Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
>Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
>
>
****
Dave Zeph, W9ZRX
Home   : (317) 896-3876
FAX/Data : (317) 867-1809
E-Mail   : zephd@iquest.net

207. Re: [NETSIG:1606] Re: G8BPQ TXD .... HELP!!!!

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 18 Jul 95 12:00:32 PDT
To: netsig@tapr.org
Message-ID: <9507181200.ZM9136@hanko>
Rendered body type: text/plain

On Jul 18, 1:34pm, Dave Zeph wrote:
> Subject: [NETSIG:1606] Re: G8BPQ TXD .... HELP!!!!
> Hank .... I've tried KISS in the PacComm Code, the latest MFJ Code that
> ships with the 1270C, the TAPR 1.1.7b Code, the TAPR V1.1.8 Code, something
> called KISS56 (supplied by John Ackerman - AG9V), and BPQ's JKISS EPROM ....
> all with the same (nada) results. In all cases the TXD NEVER CHANGES.
>
> KISS56 was developed for use with the Ottawa PI card and obviosuly has a
> faster (but TOO FAST) a value of TXD.
>
> Do you know the locations of the default TXD parameter in (any!) of the KISS
> images. Accroding to K3MC and KA9Q's paper on KISS, they set the default
> TXD to 50 (500ms) and that is what I am hearing.

No, don't know the locations.

> I could EASILY program an EPROM with different default parameters (there's
> only 3 or 4 in KISS) and work around this problem.

Strange as it might seem, I've never run across this problem, and
have set up dozens of tncs to run with bpq, both PC version and DE version.

I've never been able to change TXD once the node was running though -
always requires a restart of the node code for the TXD to be sent to
the tnc - bpq's documentation claims otherwise, but is clearly wrong.

"never" means "I waited more than 24 hours and the TXD did not change".

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

208. Apolgies

From: zephd@iquest.net (Dave Zeph)
Date: Tue, 18 Jul 1995 19:14:27 +0000
To: netsig@tapr.org
Message-ID: <m0sYI6v-000BF2C@dorite1.iquest.net>
Rendered body type: text/plain

I apoogize for the unnecessary copies you've received of what were intened
to be individual replies to specific indiciduals.

Every time I use REPLY with NETSIG I forget that messages from this
reflector arrive with the REPLY TO: field set to   netsig@tapr.org. I
"remember" after receiving back a copy of my personal reply! This is not
the case with the other reflectors to which I subscribe.

73 ---> Dave, W9ZRX

209. Re: [NETSIG:1599] Re: Bulletins vs Mail

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Tue, 18 Jul 1995 15:14:10 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950718142946.248A-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Tue, 18 Jul 1995, Charles Brabham wrote:

> > Howie blabbed:
> >Would it be fair to say Charles that you prefer having no connectivity to
> >having some connectivity with carriage by commercial means?
> >
...
> Yes, Howie; I'd say that NO "connectivity" is MUCH better than having ANY
> amount of "connectivity" by commercial means, when this is considered as a
> Ham Radio issue.

I think it's helpful for those of us who aren't knee deep in the doo doo
to try to see where the active proponents stand, and how far their
positions take them. Sometimes the positions are so extreme as to cause
loss of valid issues beneath the noise level.

For example, one argument mentioned on one of these SIGS in attempt to
discredit those who would link by commercial means is availability during
emergency. In an act of commendable restraint, the other side didn't
bring up the irony of a great reliance upon commercial power mains liekly
to go away before the commercial paths.

These absurd reductio arguments aside, I find some validity in a concern
over reduced use of the amateur bands for internetworking but I've yet to
be convinced the sky is falling, that anyone is acting traitorously, and
that the 'problem' undercuts the future of amateur packet radio
definitively enough to warrant the vicious battle being waged.

If everyone with access to internet forwarding would move there today
folks would continue to work on improved amateur networking techniques.
An exclusive-or condition was not emplaced. I suspect that enough of an
improvement in amateur internetworking, universal 9600 baud perhaps, can
Turn the Terrible Tide.

Necessity is said to be the mother of invention. I think it'd be more
accurate to see joint parental responsibility when we talk of hamming,
where curiousity coupled with ego ("I invented it") is invention's other
parent.

In the meantime it seems counterproductive to sacrifice connectivity on
the altar of bandwidth purity. There are many people who don't care one

whit how their BBS works so long as their mail gets to the destination.
These people are gone when the system is gone. Some of us may think them
lesser hams for it, but we still need their numbers.

>
> It amounts to hams being so concerned about using a networking protocol
> which is unsuitable for RF that they are willing to QUIT USING RF to do so
> -- But they still want it to be called "ham radio".
>
> Think about it.

What makes you think I haven't Charles? We didn't all arrive at this
discussion with empty heads and ham tickets with the ink still wet. I was
part of a batallion fighting in the front lines of the mid-80s protocol
wars. We wasted more time jawboning than coding systems and building
networks.

Don't recall if you took part or witnessed those battles yourself. I do
recall the conflaguration as having been horrible waste of time and
energy. If my small contribution to this thread does one thing I hope
that it helps to defuse something bound to lead to the same sapping of
strengths I witnessed, first hand, in the mid 80s.

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

210. Re: [NETSIG:1609] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 18 Jul 95 13:19:58 PDT
To: netsig@tapr.org
Message-ID: <9507181319.ZM9237@hanko>
Rendered body type: text/plain

On Jul 18, 2:30pm, Howard Goldstein wrote:

<deletia>

> Don't recall if you took part or witnessed those battles yourself. I do
> recall the conflaguration as having been horrible waste of time and
> energy. If my small contribution to this thread does one thing I hope
> that it helps to defuse something bound to lead to the same sapping of
> strengths I witnessed, first hand, in the mid 80s.

I'd like to add my two cents to reinforce Howie's comments.

The last two evenings I've been writing code to test some of the
ideas we have discussed, in hopes of sparking some interest here
in the PNW portion of the network. Response has been positive, so
I suspect we will be busy playing with some new stuff for the next
few months: tcp/ip things and APRS things in particular.

Maybe it is time to rethink WP in light of the ideas raised in the
ROSE et al network discussions. Can anyone point me to some specifics
on the ROSE protocol? Didn't see any answer to my question about the
availability of ROSE that runs on a PC, is there such a thing?

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

211. Re: [NETSIG:1605] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 18 Jul 1995 15:20:59 -0500
To: netsig@tapr.org
Message-ID: <199507182020.PAA28081@ns1.texoma.com>
Rendered body type: text/plain

>According to Charles Brabham:
>> It amounts to hams being so concerned about using a networking protocol
>> which is unsuitable for RF that they are willing to QUIT USING RF to do so

>> -- But they still want it to be called "ham radio".
>>
>
>Charles,
>
>How do 'you know' that what you are talking about is unsuitable for RF ?
>

Experts on TCP/IP regularly state that connectivity is a requirement for any
long-distance use of TCP/IP. Connectivity. as defined by these same experts,
requires high baud rates over long distances. No RF system currently in use
or over the immediate horizon can accomplish this. The experts say that this
connectivity can only be accomplished (on a practical, usable basis) by
use of wirelines.
The experts on TCP/IP say that TCP/IP cannot be used over long distances,
utilizing the tools which ham radio puts at our disposal. (Radios)
This means that TCP/IP as a networking protocol is unsuitable for RF, since
RF can't be used to give it the connectivity it requires.

>Anyway - amateur radio is just like horse racing. Everyone can pick a
>a different horse.
>
As long as the horse is connected by use of radios, you can call it Ham Radio.

>Debates over AM vs SSB, RTTY vs Packet, etc, etc, etc have existed as long
>as amateur radio. Everyone should focus on what they like to do and don't
>worry about what others are doing. Amateur radio is changing -- big time.
>We are becoming a hobby of special interests...even more so than any time in
>the history of amateur radio. This is going to cause even wider splits
>between smaller numbers of amateurs particpating. This is only going to
>become worse as our specturm continues to shrink over the next 10 years.
>
Yes, hams always have and always will argue various radio issues. That's
normal and healthy.
The current wire/Rf debate doesn't cover this radio application over that
one.. It covers the issue of whether we should use radios or commercial
networks for our communications.

I'm not ready to just "lay back" and let that spectrum dissappear over the
next ten years. I certainly am not going to do anything to make the problem
worse.. Avoiding use of wirelines will help very much to slow or stop that
reduction of spectrum for hams. Heavy use of wirelines will accellerate our
loss, and make it a certainty.

That's all I need to know, ect.

>Personally, I am going to continue to do stuff I like to do...this is a
>hobby. Life and useful spectrum is too scarce to worry about lots of the
>things I have seen debated over the last few weeks. I am going to go have
>fun at the UoSAT meeting.
>
I would suggest that spectrum becoming scarce is a GOOD reason to be
worried, as a ham. Hams who have earned a good reputation in the hobby are
hams who have worked to advance ham radio and secure it's future.

>The golden rule of amatuer radio is that "those who code and design -- rule"
>If you do not write code or develope hardware then you have no control in
>what is eventually going to happen. Pure and simple. The only way to
>have any control on what is available and is being implemented is to be the
>author or designer.
>
This is where TCP/IP falls very short of what hams have become used to with
AX25 BBS software. There is little or no variety to be had with TCP/IP.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Philosophers must ultimately find thier true perfection
in knowing all the follies of mankind by introspection.

212. Re: [NETSIG:1609] Re: Bulletins vs Mail

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 18 Jul 1995 15:48:11 -0500
To: netsig@tapr.org
Message-ID: <199507182048.PAA29118@ns1.texoma.com>
Rendered body type: text/plain

According to Howie ...
>
>> >Would it be fair to say Charles that you prefer having no connectivity to
>> >having some connectivity with carriage by commercial means?
>> >
>..
>> Yes, Howie; I'd say that NO "connectivity" is MUCH better than having ANY
>> amount of "connectivity" by commercial means, when this is considered as a
>> Ham Radio issue.
>
>I think it's helpful for those of us who aren't knee deep in the doo doo
>to try to see where the active proponents stand, and how far their
>positions take them. Sometimes the positions are so extreme as to cause
>loss of valid issues beneath the noise level.
>
I have provided very simple, straightforward facts on this issue. Calling
facts you don't want to hear "noise" in no way detracts from thier factual
nature.

>For example, one argument mentioned on one of these SIGS in attempt to
>discredit those who would link by commercial means is availability during
>emergency. In an act of commendable restraint, the other side didn't
>bring up the irony of a great reliance upon commercial power mains liekly
>to go away before the commercial paths.
>
Yes, that's why we have Field Day, and many of us arrainge backup power
supplies for our radios and computers. Also, many node site are going over
to solar power, where this is practical.
(Side note) Commercial carriers use battery backups and generators too. Tour
your local phone company's switching center to see this done on a large scale.

>These absurd reductio arguments aside, I find some validity in a concern
>over reduced use of the amateur bands for internetworking but I've yet to
>be convinced the sky is falling, that anyone is acting traitorously, and
>that the 'problem' undercuts the future of amateur packet radio
>definitively enough to warrant the vicious battle being waged.
>
Again, I see nothing vicious in pointing out facts, even if some folks don't
want to hear them.
If you can't see the implications which follow large scale use of wirelines,
you shouldn't be using them FOR SURE.

>If everyone with access to internet forwarding would move there today
>folks would continue to work on improved amateur networking techniques.
>An exclusive-or condition was not emplaced. I suspect that enough of an
>improvement in amateur internetworking, universal 9600 baud perhaps, can
>Turn the Terrible Tide.
>
Again, read previous diatribes again. Look for ones you really hated to
hear. This time, pay attention to them as you read.

>Necessity is said to be the mother of invention. I think it'd be more
>accurate to see joint parental responsibility when we talk of hamming,
>where curiousity coupled with ego ("I invented it") is invention's other
>parent.
>
No, you're wrong. LAZINESS is the mother of invention. Things get difficult,
and some bright, lazy guy jumps up and figures out a way to avoid all that
work in the future.

>In the meantime it seems counterproductive to sacrifice connectivity on
>the altar of bandwidth purity. There are many people who don't care one
>whit how their BBS works so long as their mail gets to the destination.
>These people are gone when the system is gone. Some of us may think them
>lesser hams for it, but we still need their numbers.
>
We have gotten by just fine without "connectivity" as defined and required
by TCP/IP.. We can continue to get by just fine without it too.

The system isn't gone. Yet.

>>
>> It amounts to hams being so concerned about using a networking protocol
>> which is unsuitable for RF that they are willing to QUIT USING RF to do so
>> -- But they still want it to be called "ham radio".
>>
>> Think about it.
>
>What makes you think I haven't Charles? We didn't all arrive at this

>discussion with empty heads and ham tickets with the ink still wet. I was
>part of a batallion fighting in the front lines of the mid-80s protocol
>wars. We wasted more time jawboning than coding systems and building
>networks.
>
If you still advocate wireline use, you're not "thinking things through",
and placing Ham Radio first in your considerations. Again, re-read previous
postings you didn't like to hear.

>Don't recall if you took part or witnessed those battles yourself. I do
>recall the conflaguration as having been horrible waste of time and
>energy. If my small contribution to this thread does one thing I hope
>that it helps to defuse something bound to lead to the same sapping of
>strengths I witnessed, first hand, in the mid 80s.
>
>Howie
>

This is not a "this radio net VS that radio net" discussion. Personally, I
don't consider it a war. It's a discussion, and the wireline advocates are
running short of justifications, buzzwords, and unexamined assumptions in
the face of the facts surrounding the issue.

I know it's not fun to be wrong. I've been there, and that's why I no longer
join in a debate before checking the facts and thier implications as best I can.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Philosophers must ultimately find thier true perfection
in knowing all the follies of mankind by introspection.

213. Re: [NETSIG:1592] Re: FlexNet (was acl/digipeating)

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Tue, 18 Jul 1995 23:20:50 +0200
To: netsig@tapr.org
Message-ID: <199507182120.XAA23609@unix10.pressimage.fr>
Rendered body type: text/plain

Hi Tom, glad to receive your comments (i knew i would receive some ;-))
Let me tell you that i have nothing against the original ROSE system (i
don't know it)... but i hate its french PC version...

>>The switch is one of the best system i've ever seen. It has several
>>improvements compared to others. Unlike ROSE or similar, it does no
>>hierarchical adressing, but exchanges node tables all over the network. Node
>>tables include "Round Trip Time", so each switch will choose the faster path
>>to build the connection.
>Isn't the node table a problem as you get a larger network, what happens when
>the node table is full? Hierarchical addressing allows for networks of
>unlimited size.

In theory, it is certainly a problem (specially for RMNC/Flexnet nodes that
run with Eprom/limited memory: PC/Flexnet do not have these limitations).
I don't know what is the memory limit on RMNC/Flexnet nodes.
It may also frighten you because of the traffic it creates. But:
        -There is 3 "levels" of links:
                -The first one is for untested links
                -Second is for tested links, invisible
                -The third one is for tested links exchanging node tables.
       Not ALL links are exchanged in node table, but only the most
important ones.
        -Node tables are exchanged on point to point links. If those links
are not reliable enough to exchange node tables, it would be better to close
the node !

In everyday use, it runs perfectly well because the network is reliable. The
D command list all known links, usually 3 screens full of them...
And.. Is "unlimited size" really useful ? ;-))

>>Example of syntax: C F1xyz V F1abc, F1def.
>>F1xyz is the station you want to connect, F1abc is your local node, and
>>F1def the destination node.
>This is just like ROSE, but without the problem of F1DEF moving and having
>the callsign change and blowing up all the BBS connect scripts...

Yes, if the final node moves or changes, there could be some problems. But
these problems will only affect origin and destination. That's fine, because

affected stations are those who know the solution.

The "middle" (network) works alone: No need to configure hierarchical
routing for destinations you don't know...

In Flexnet, node can appear, disappear, links can be more or less reliable,
the path chosen will always be the best one, as it is "real time" adjusted
rather than human defined...

>>No adress in that system. As a node often has more than 1 user frequency,
>>the node that gets a call for F1abc will look for him in its last heard
>>table. It is also possible to send a "find" command, that will make the
>>final node looking for the station on all user frequencies.
>This is nice.

I forgot to say that user frequency follow the DAMA (Demand Assigned
Multiple Access) protocol.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
       > F1JKJ@planete.net <   Public Key on mail servers
         Fidonet 2:323/27.1
         Compuserve ID 100407,436

214. Re: Networks real and imagined

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Tue, 18 Jul 1995 13:09:16 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sYI1A-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
> Pleas folks! The internet is not in *any* way a part of the ham radio
> network! Is this so hard to understand?

Hank,

This is your "OPINION".   It can be argued that since the Internet
carries ham traffic and is used to encapsulate NetRom connections it
is indeed a part of the ham radio packet network even if it's not using
RF.

> If the internet is indeed a
> "vital link" that makes the ham radio network possible, then I am proved
> right, and the ham radio network *will* be dead in that 12-36 month
> time frame.

Again, this is simply your opinion. You have some very relevant concerns
about the lack of interest in HF message trafficking and I believe anybody
doing LL forwarding should consider them for a moment before choosing
to continue.

My opinion is that the Internet connections will allow us to do things
that are, for the most part, impossible with RF paths. It will bring more
users and better networks to local hubs. It is a good thing!

If the RF forwarding network is totally replaced by the cheap, easy and
reliable connections provided by the Internet, is that the fault of the
Internet or of the backward state of the technology and politics
involved in the existing RF network?

> a "LL Lid" and

Perhaps this term has been a bit over-used?

> Good news! Lots of us are already on air with 750 bps capability.
> It works, and it works well. Spend the $395 for a modem and join us.

Here's some real questions to make up for my expressing some
well known beliefs that folks are getting tired of hearing about:

What would happen if a thousand new hams attempted to join the RF forwarding
network with CLOVER boards? Would we be able to build a real network that
keyboarders and game players could use? Does CLOVER software use the same
tired old point-to-point-to-point means of bulletin passing instead of some
better broadcast protocols? Is CLOVER affected by hidden transmitters?
How would CLOVER be affected if multiple stations were on a single frequency?

How would the overall throughput of a point-to-point-to-point CLOVER

network compare to a hub system using tired old 300 bps packet to
broadcast bulletins simultaneously to hundreds of local hubs with HF
packet receive-only capability?

CLOVER is much better technically than packet, and it's cheaper than it
was. Still, in my opinion, it is a cadillac of HF communications
that will be the playground of a select few. It, and the other better
protocols such as PACTOR and GTOR, are what we need to pass the personal
messages. The Internet will continue to grow as a preferred mode until a
better means of bringing the bulletins easily and cheaply to the
masses is found.

>   ... Hank

Bill

vodall@bigsky.dillon.mt.us
wa7nwp@wa7nwp.#ncmt.mt.usa.noam

ps.. I forward these discussions on to our local packet network.
There have been several cases where I've had to not pass on a brief message
with good points because it was followed by hundreds of lines of quoted old
messages. Short messages work much better.

215. Re: [NETSIG:1599] Re: Bulletins vs Mail

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Wed, 19 Jul 95 01:33 EDT
To: netsig@tapr.org
Message-ID: <m0sYRl1-000C6BC@balrog.k8lt.ampr.org>
Rendered body type: text/plain

> n5pvl@texoma.com (Charles Brabham) writes:

>
>I'll assume here that the buzz word "connectivity" has it's usual
>implication.. Long-distance, high-speed links which cannot currently be
>achieved with RF, and are only needed in order to use ONE protocol which has
>proven itself (for this very reason) to be fundamentally unsuitable for
>Ham Radio applications - TCP/IP..

I disagree. TCP/IP is fundamentally suitable for the applications I'm
interested in, which include doing peer-to-peer networking of
computers over ham radio.

While it's true that most application protocols in the Internet suite
assume end-to-end connectivity, there are applications which are
inherently end-to-end (real-time conferencing and file sharing come to mind).

Using TCP/IP is a necessity. It is the lingua franca of modern
operating systems. There are not enough resources in the ham
community to reinvent all the networking software we need, even assuming
it was somehow *desireable* to be incompatible with the rest of the
networking world.

Would you prefer to interact with this list using a PBBS interface, or
Eudora?

The challange is building networks that support real-time
applications, using whatever links are appropriate.

>It amounts to hams being so concerned about using a networking protocol
>which is unsuitable for RF that they are willing to QUIT USING RF to do so
>-- But they still want it to be called "ham radio".

It amounts to wanting to build end-to-end applications, and to use standard
components to do so. If it uses ham radio links anywhere, it is by
definition ham radio.

73,

        /gary

Gary L. Grebus   Home: glg@k8lt.ampr.org
Brookline, NH   Work: grebus@eng.pko.dec.com
                        Ham Packet: K8LT@WA1PHY.#EMA.MA.USA

216. Re: [NETSIG:1582] Re: Networks real and imagined

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Wed, 19 Jul 95 00:50 EDT
To: netsig@tapr.org
Message-ID: <m0sYR5l-000C6BC@balrog.k8lt.ampr.org>
Rendered body type: text/plain

>
>On Jul 17, 4:42pm, Karl F. Larsen wrote:
>> Subject: [NETSIG:1579] Re: Networks real and imagined
>>
>>   Hank, you make me mad at times. You choose to belittle what
>> others think because they do not conform to your thinking. Now rather
>> than comment to your comments here is a restatement of what I said.
>

To which Hank Oredson replied:

>I'm sorry you think that is what I was doing.
>
>I was complaining about those folks who's actions may very well
>destroy the precise topic this SIG is designed to promote.

Since you label those who disagree with you as "LL lids", it seems
you want to belittle them, rather than discuss their ideas.

I'm certain there are people who will find doing a "long haul ham
radio network" a worthwhile end in itself. But there are interesting
applications, which use ham radio, and which that network is never
going to be able to carry. The 750 bps HF links which you advocate as
components of this network are an order-of-magnitude slower that what
is interesting even today.

>
>If we wish to change the charter of these SIGs to "networking FOR radio
>amatuer use" instead of "networking using amateur radio" then the view
>you espouse might make sense. For the present charter of these groups,
>your view provides much more harm than good, and I for one would prefer
>to see it removed from the discussion.

It seems to me that any network which uses any links over amateur
radio qualifies as "networking using amateur radio", and I would
prefer to see the discussion move forward on that basis.

73,
        /gary
        K8LT

Gary L. Grebus   Home: glg@k8lt.ampr.org
Brookline, NH   Work: grebus@eng.pko.dec.com
                        Ham Packet: K8LT@WA1PHY.#EMA.MA.USA

217. Alleged "flame war"

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 19 Jul 1995 13:03:03 -0500
To: netsig@tapr.org
Message-ID: <199507191803.NAA22216@ns1.texoma.com>
Rendered body type: text/plain

With the facts against them, and with thier position unsupported by a firm
commitment to the greater good of packet and ham radio, a few of the
wireline advocates are engaging in desperate tactics..
They are trying to make the issue "go away" by crying "flame war", and
making constant reference to the "noise level."

I have avoided "flaming" anyone participating in the discussion of this
issue. What I HAVE done, on several occasions, is to point out facts which
some participants have found very unpleasant to have to face. This has made
some of the wireline folks very angry, and in thier fear and anger they
ascribe the same feelings to those who have POINTED OUT those unpleasant
facts. In this, they are simply wrong again.

My motivation in advocating Radio for Ham Radio has nothing to do with
anger, personal animosity, or intolerance of different viewpoints. I am
primarily motivated by a deep appreciation of the hobby, and a desire to see
it continue to grow and be a positive force in our society.

Example #1. Greg: I know Greg, and like him. The fact that I disagree with
Greg has nothing to do with anger or personal animosity. I think Greg is one
of the most intelligent, fun to be around hams I've ever encountered. I have
a deep respect for his accomplishments and the many hours he has put in,

making some rather significant contributions to the hobby.
That doesn't mean I can't disagree with Greg, or argue ideas with him. When I do, the label of "flame wars" and "noise level" in no way describes what is happening.

Example #2. Hank: In Hank's case, I HAVE engaged in a "flame war" with him on packet, a few years back. Things got pretty hot! Anyone who thinks I am "flaming" them can simply ask Hank for a comparasin. My behavior here on the NETSIG is VERY DIFFERENT from my behavior when engaged in a "flame war". The point here is that Hank has supported my position in this issue not because he thinks I'm a great guy, but because he thinks that what I'm saying is essentially correct. He simply agrees with much of what I'm saying, and is placing the good of the hobby above any bad feelings which may have existed as a result of my "flames" of the past. The fact that he was the first to step forward and heal the old breach indicates that he's a better man than I am.

I see no need to apologise for pointing out facts, however unpleasant they may be for some hams to hear. I feel regret when a wireline advocate becomes angry over the issue, but it's not a personal regret. That is to say; I don't feel personally responsible for other people's feelings when all I have done is to simply point out facts.

A few months ago, I posted a bulletin on the packet network on this same subject. Those of you who have placed yourselves above the "rank and file" of ham radio and have lost touch with them may be surprised to hear that out of forty replies I recieved to that posting, only three were from hams who didn't like to hear what I had to say. Of those three, two openly admitted that I was right, but that they still didn't like to hear it. That left one ham out of the forty who replied, and totally disagreed with me. This was the operator of an Internet/packet gateway.

When I joined the NETSIG and brought the subject up, I expected the reception I got. After all, the SIG is done on Internet, so of course a disproportionate number of wireline advocates would tend to gather here. Despite this, I don't feel that it is inapprporiate for me to express my views on the issue on the TAPR NETSIG.
After all, the NETSIG is dedicated to the advancement of ham radio. I'm sure that there are SIGs on Internet which are intended to further the interests of commercial communications carriers, but the TAPR NETSIG is not one of them.

I don't think that advocates of wireline should "go away" from this SIG. I figure that if you have a ham ticket, you're a ham and have a place here. What I WOULD like to see the advocates of wireline over RF do is to re-examine the basic premise of thier thinking. I'd like to see them re-examine thier position in the light of the facts which I have presented, and decide whether they would rather advance ham radio or retard it.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Philosophers must ultimately find thier true perfection
in knowing all the follies of mankind by introspection.

218. Re: [NETSIG:1586] G8BPQ TXD .... HELP!!!!

From: TGVAVRA@aol.com
Date: Tue, 18 Jul 1995 20:25:52 -0400
To: netsig@tapr.org
Message-ID: <950718202549_35623509@aol.com>
Rendered body type: text/plain

Dave - the only difference I see between your TNC-2 and mine is that I use BPQKISS PROM in mine. maybe ur BBS friend is too??   gl   tom   WB8ZRL/0

219. Re: [NETSIG:1578] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 19 Jul 95 09:14:52 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c46@ram.net>
Rendered body type: text/plain

>In a net/rom network (more correctly, the g8bpq switch network
>as we implement it here in the PNW), I would type:

Is every user required to run BPQ?

>
>Is there a directory in ROSE that holds the assocations between
>201338 and W2VY? Or is that something I have to know by other means?

It has to be known by other means, but we also have a 411 service to locate
network facilities.

>Perhaps I first should have asked: Is there a ROSE implementation
>that runs as a TSR in DOS or a DLL in windows, with API so that
>applications can use the network directly? If not, where can I
>locate the ROSE spec to see how hard it would be to construct such
>a TSR or DLL.

All you need to access ROSE is an AX.25 API, since ALL of the required
information is supplied in the digipeater fields.

If you want to write one, ROSE is AX.25, PID=01 upper layer is CCITT X.25
also known as ISO 8208. There are some extensions, but those aren't needed
for a User X.25 link, just for internal links.

>
>(I'm asking all these questions because we have pretty much pushed
>net/rom and bpq switch capabilites as far as we can, and are starting
>to look at alternative ways of doing things. tcp/ip has been tried
>and found wanting as layer 3/4 transport, we are playing with
>whatever we can find to see how it works and how it performs in
>a real network environment.)

ROSE does have less bagage in terms of overhead AND protocol data units...

(It leaves the Level 4 to the end points only, no network level
retransmissions...)

tom

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

220. Re: [NETSIG:1600] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 19 Jul 95 07:16:55 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c44@ram.net>
Rendered body type: text/plain

>The only reason I can see to keep the digi function is to support software
>which REQUIRES it, as ROSE does. Compatability is a more important
>consideration than getting rid of obsolete functions, if it comes down to a
>choice between the two.

ROSE doesn't require that you digipeat, but that you specify digipeater
address fields to tell the network where you want to go.

>
>On the other hand, I think it would be smart to try to find a way AROUND
>this need for the digipeat function in ROSE, and any other application which
>currently requires it.
>
>In general, I find digipeating in node software to be undesirable. We should
>put some effort into getting away from it.

You are missing the point of using the additional fields for ROSE completely.

Instead of:

C NODEA
C NODEB
C NODEC...
C USER

In rose you issue a command to you tnc:

C USER Via NODE,Address

And you are DONE.

It is the ONLY AX.25 networking solution that gets all the network level
information from outside the data field of the AX.25 frames. For this reason
ANY AX.25 application can be used through ROSE without any major
modification. (No need to program in C NODE commands and messages)

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

221. Re: [NETSIG:1603] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 19 Jul 95 07:23:48 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c45@ram.net>
Rendered body type: text/plain

>Yes, we do need to solve the hierarchical network address problem if we
>are to create a viable wide area network, but no proposal I've seen to
>date looks like it will actually solve that problem. All the proposals
>require some sort of distributed directory service so users can look up
>the address of other users. Seems to me the key to making a wide area
>network work for hams requires this directory service to be transparent.
>

We have been discussing a solution to solve that problem.

Initially it will be an external server, but I will also add coding so that
if you connected using a special address (0 = 'Operator Assisted') the
network would automatically query the database.

I really didn't see the addressing as a problem until I started considering
the following application:

Digital Voice - punch in a callsign of who you want to talk to and hit the
PTT and the network figures the rest out.

For normal operations it is not such a problem..

If you want to call me call the phone number from my signature file and ask
for Tom...

(Like W2VY @ 201338 for my TNC, 2013389289 for voice, etc)

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

222. Re: [NETSIG:1618] Re: G8BPQ TXD .... HELP!!!!

From: zephd@iquest.net (Dave Zeph)
Date: Wed, 19 Jul 1995 20:37:41 +0000
To: netsig@tapr.org
Message-ID: <m0sYftQ-000BQqC@dorite1.iquest.net>
Rendered body type: text/plain

Hi Tom ... nope, he's using both the native TNC KISS, or JKISS. He runs 4-5
ports .... 2 on HF. I pretty sure that this is the aame problem that has
been experienced by others trying to put in high speed links. What they
don't know is that the TNC is using the SLOW defaults (the KISS TXD and
SLOTTIME default to 500ms!). The BPQ computer, however behaves like the TNC
was obeying the parameters.   One thing about KISS - there is NO FLOW
CONTROL of any type - I read K3MC and KA9Q's original paper on KISS. Anyhow
these fellows trying to make things go fast have a computer running that
way, and a TNC with values even too slow for 1200 baud! Needless to say,
things get mucked up pretty quickly.

I ended up dropping back to a single TNC running 1200 baud with the internal
modem so I could HEAR what was happening. Test equipment = Ear + Calibrated
Brain!

Yesterday N2WX gave me the locations of the defaults for these parameters
and I burned a new EPROM with the faster values. BPQ still doesn't update
the TNC, but at least the defaults are now something acceptable. Just a bit
of a pain to have to burn a EPROM to "tune" the timings.

Years ago these were exciting challenges! Now they are just hair pulling
struggles - and lord knows, their ain't enough hair left to loose this way!

Thanks and 73 ---> Dave

>Dave - the only difference I see between your TNC-2 and mine is that I use
>BPQKISS PROM in mine. maybe ur BBS friend is too??   gl   tom   WB8ZRL/0
>
>
****
Dave Zeph, W9ZRX
Home   : (317) 896-3876
FAX/Data : (317) 867-1809
E-Mail   : zephd@iquest.net

223. Re: TCP/IP Disadvantages

From: willi_r@mail.uwlax.edu
Date: Tue, 18 Jul 95 18:11:50 -0500
To: netsig@tapr.org
Message-ID: <9507182311.AA11444@mail.uwlax.edu>
Rendered body type: text/plain

I have seen it stated by some on the TAPR sigs, that TCP/IP is not a good
mode for amateur radio and I am perplexed by this. I went back and spent a
considerable amount of time reviewing past Status Registers which seem to
indicate to me that TAPR considers TCP/IP to be one of the best, if not the
best, protocol for networking. Also, recent articles in QST seem to suggest
that ARRL staff also view this as the protocol to look toward.

Could you please enumerate the disadvantages of TCP/IP in rf paths?

Rick, KV9U

224. Re: [NETSIG:1615] Re: Bulletins vs Mail

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 19 Jul 95 14:04:29 PDT
To: netsig@tapr.org
Message-ID: <9507191404.ZM13013@hanko>
Rendered body type: text/plain

On Jul 19, 3:09pm, Gary L. Grebus wrote:
> Subject: [NETSIG:1615] Re: Bulletins vs Mail
>
> > n5pvl@texoma.com (Charles Brabham) writes:
>
> >
> >I'll assume here that the buzz word "connectivity" has it's usual
> >implication.. Long-distance, high-speed links which cannot currently be
> >achieved with RF, and are only needed in order to use ONE protocol which has
> >proven itself (for this very reason) to be fundamentally unsuitable for
> >Ham Radio applications - TCP/IP..
>
> I disagree. TCP/IP is fundamentally suitable for the applications I'm
> interested in, which include doing peer-to-peer networking of
> computers over ham radio.

All attempts of which I am aware to do this using tcp/ip without
some underlying "appropriate" transport have failed. There is, as
of yet, no viable means of creating an ip network in the ham radio
environment.   Oh, theoretically, sure, one might be able to do it.
As a practical matter, it mostly just doesn't work, due to politics,
the difficulty of finding someone who will maintain and update
routing tables and domain tables, the fact that the majority of
hams on packet do not use ip and see it as a "closed network only
for the in group to use", etc.

> While it's true that most application protocols in the Internet suite
> assume end-to-end connectivity, there are applications which are
> inherently end-to-end (real-time conferencing and file sharing come to mind).
>
> Using TCP/IP is a necessity. It is the lingua franca of modern
> operating systems. There are not enough resources in the ham
> community to reinvent all the networking software we need, even assuming
> it was somehow *desireable* to be incompatible with the rest of the
> networking world.

Oh for heavens sake! We are *not*, I repeat *not* trying to "reinvent"
anything. We are trying to provide the resources that protocols like
ip require to function. I really see these "just use ip" statements as
rather silly and uneducated. Bet you don't run "just ip" on your machines
at work, there is probably ethernet or frame relay (or heavens even SNA
or DECNET) under that ip. On ham radio the best solution we have to date
is NET/ROM or ROSE under ip. AX.25 under ip does not provide the needed

automated adaptive routing capbility ham radio requires. Don't even think
of mentioning rip, anyone who has thought about it for more than three
minutes will understand why it fails miserably in a radio environment.

Once someone creates a viable BBS system for tcp/ip, then I'll start to
take the "ip does everything" comments seriously. To date the ip based
BBS implementations all appear to be cheap knock-offs of the 'real thing'.
When given the choice, users choose to connect to FBB, RLI, MSYS, etc.
and avoid JNOS et al. And don't tell me I'm biased, I'm aware of that,
but I still run JNOS for those few of my users who prefer it. All 3 out
of 125 of them.

> Would you prefer to interact with this list using a PBBS interface, or
> Eudora?

No brainer: the BBS interface of course, it is far simpler. But I use
both Netscape and Mosaic on ham radio (you know, the RF packet network),
sometimes ELM, occasionally JNOS, but mostly the BBS. However, that choice
is not availble here, so I use Zmail, which is what IS supported here on my
little corner of the internet. I hate it.

> The challange is building networks that support real-time
> applications, using whatever links are appropriate.

Wrong. The challange is to advance ham radio digital communications.

If you want real time connectivity, then work on that. Other folks
don't care a hoot about "real time" unless you mean "the email was
delivered at least as fast as our design target." i.e. one person's
real time is another's unacceptable delay.

> >It amounts to hams being so concerned about using a networking protocol
> >which is unsuitable for RF that they are willing to QUIT USING RF to do so
> >-- But they still want it to be called "ham radio".
>
> It amounts to wanting to build end-to-end applications, and to use standard
> components to do so. If it uses ham radio links anywhere, it is by
> definition ham radio.

I for one am very sorry to see this kind of thinking. Again someone
has missed the entire point of the discussion. Please re-read Charles'
postings and consider carefully what he and I are both attempting to say.

My prediction, in case you missed it, was that the long haul ham
radio links will have all died in 12-36 months, replaced by commercial
network links (non ham and probably non radio). Yup, they will all be
real time end to end whiz bang super duper networks, just like CIS,
AOL, NETCOM, etc. because they will BE those networks. Once this happens,
we will have even less use for our spectrum, and it will go away, little
by little, until it is all gone.

Why will they die? They will be no pressure to construct them, as
there will be no traffic for them to handle. An example close at hand:
the Southern Oregon VHF link to California went away some time ago,
and has not been repaired. It was easier (and oh gee whiz faster) to
use the telephone. That nice fast telephone link is now taking traffic
off the two HF links in Northern Oregon (oh gee whiz they are slower).
There is no longer any investment toward creating a long haul network
that links Oregon and California, because there is no traffic attempting
to use such a link ... MCI got it all instead, and gets the $$$ as well.

We could, instead, put our effort into creating ham radio network resources.

If you prefer to play on the telephone, please go take part in a SIG or
newsgroup with that focus. In these SIGs we are talking about building
ham radio networks, not about radio hams using commercial networks.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

225. Re: [NETSIG:1619] RE: ACL/digipeating

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 19 Jul 95 16:01:30 PDT
To: netsig@tapr.org
Message-ID: <9507191601.ZM13191@hanko>
Rendered body type: text/plain

On Jul 19, 5:26pm, Tom Moulton wrote:
> Subject: [NETSIG:1619] RE: ACL/digipeating
> >In a net/rom network (more correctly, the g8bpq switch network
> >as we implement it here in the PNW), I would type:
>
> Is every user required to run BPQ?

No, we "require" nothing at all. Users are free to run BPQ, NET/ROM,
ROSE, TexNet, plain AX.25, ip, ip over NET/ROM, RT (layer 3/4 one-to-
many conferencing protocol), anything they like. However we chose
BPQ switches for most of our network routers, and users do with them
whatever they like.

> >
> >Is there a directory in ROSE that holds the assocations between
> >201338 and W2VY? Or is that something I have to know by other means?
>
> It has to be known by other means, but we also have a 411 service to locate
> network facilities.

Ok, makes sense.

> >Perhaps I first should have asked: Is there a ROSE implementation
> >that runs as a TSR in DOS or a DLL in windows, with API so that
> >applications can use the network directly? If not, where can I
> >locate the ROSE spec to see how hard it would be to construct such
> >a TSR or DLL.
>
> All you need to access ROSE is an AX.25 API, since ALL of the required
> information is supplied in the digipeater fields.

By "API" I meant software or programming interface so that applications
on the same machine running the switch can talk to the switch ...

> If you want to write one, ROSE is AX.25, PID=01 upper layer is CCITT X.25
> also known as ISO 8208. There are some extensions, but those aren't needed
> for a User X.25 link, just for internal links.

No, that's not what I meant - that's a connection protocol. I meant
ability for an application to speak with the switch running on the same
computer as the application. e.g. BPQHOST or ip sockets.

> >
> >(I'm asking all these questions because we have pretty much pushed
> >net/rom and bpq switch capabilites as far as we can, and are starting
> >to look at alternative ways of doing things. tcp/ip has been tried
> >and found wanting as layer 3/4 transport, we are playing with
> >whatever we can find to see how it works and how it performs in
> >a real network environment.)
>
> ROSE does have less bagage in terms of overhead AND protocol data units...
>
> (It leaves the Level 4 to the end points only, no network level
> retransmissions...)

Was not very clear - we are looking for "new and interesting toys
for the users to play with". APRS is one we are in the process of
playing with, but we are looking for more. Some users want to "play
with the networking" rather than "play with networked applications"
so we are scouting about for toys for them to play with.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

226. Re: [NETSIG:1599] Re: Bulletins vs Mail (fwd)

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Wed, 19 Jul 1995 19:20:57 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950719192002.340C-100000@n2wx.ampr.org>
Rendered body type: text/plain

I didn't see this come through on NETSIG. Here it is again in case it got
lost in the disk problems

---------- Forwarded message ----------
Date: Tue, 18 Jul 1995 15:14:10 -0400 (EDT)
From: Howard Goldstein <hg@n2wx.ampr.org>
To: netsig@dingus.n5lyt.datarace.com
Subject: Re: [NETSIG:1599] Re: Bulletins vs Mail

On Tue, 18 Jul 1995, Charles Brabham wrote:

> > Howie blabbed:
> >Would it be fair to say Charles that you prefer having no connectivity to
> >having some connectivity with carriage by commercial means?
> >
...
> Yes, Howie; I'd say that NO "connectivity" is MUCH better than having ANY
> amount of "connectivity" by commercial means, when this is considered as a
> Ham Radio issue.

I think it's helpful for those of us who aren't knee deep in the doo doo
to try to see where the active proponents stand, and how far their
positions take them. Sometimes the positions are so extreme as to cause
loss of valid issues beneath the noise level.

For example, one argument mentioned on one of these SIGS in attempt to
discredit those who would link by commercial means is availability during
emergency. In an act of commendable restraint, the other side didn't
bring up the irony of a great reliance upon commercial power mains liekly
to go away before the commercial paths.

These absurd reductio arguments aside, I find some validity in a concern
over reduced use of the amateur bands for internetworking but I've yet to
be convinced the sky is falling, that anyone is acting traitorously, and
that the 'problem' undercuts the future of amateur packet radio
definitively enough to warrant the vicious battle being waged.

If everyone with access to internet forwarding would move there today
folks would continue to work on improved amateur networking techniques.
An exclusive-or condition was not emplaced. I suspect that enough of an
improvement in amateur internetworking, universal 9600 baud perhaps, can
Turn the Terrible Tide.

Necessity is said to be the mother of invention. I think it'd be more
accurate to see joint parental responsibility when we talk of hamming,
where curiousity coupled with ego ("I invented it") is invention's other
parent.

In the meantime it seems counterproductive to sacrifice connectivity on
the altar of bandwidth purity. There are many people who don't care one
whit how their BBS works so long as their mail gets to the destination.
These people are gone when the system is gone. Some of us may think them
lesser hams for it, but we still need their numbers.

>
> It amounts to hams being so concerned about using a networking protocol
> which is unsuitable for RF that they are willing to QUIT USING RF to do so
> -- But they still want it to be called "ham radio".
>
> Think about it.

What makes you think I haven't Charles? We didn't all arrive at this
discussion with empty heads and ham tickets with the ink still wet. I was
part of a batallion fighting in the front lines of the mid-80s protocol
wars. We wasted more time jawboning than coding systems and building
networks.

Don't recall if you took part or witnessed those battles yourself. I do
recall the conflaguration as having been horrible waste of time and
energy. If my small contribution to this thread does one thing I hope
that it helps to defuse something bound to lead to the same sapping of
strengths I witnessed, first hand, in the mid 80s.

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

227. Re: [NETSIG:1620] RE: ACL/digipeating

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 19 Jul 1995 21:26:08 -0500
To: netsig@tapr.org
Message-ID: <199507200226.VAA10477@ns1.texoma.com>
Rendered body type: text/plain

>>The only reason I can see to keep the digi function is to support software
>>which REQUIRES it, as ROSE does. Compatability is a more important
>>consideration than getting rid of obsolete functions, if it comes down to a
>>choice between the two.
>
>ROSE doesn't require that you digipeat, but that you specify digipeater
>address fields to tell the network where you want to go.
>
>
Yes, Tom; I know..

I've been using the local ROSE network (off and on) for six years now. The
point I was making is that since removing the digi function from node
firmware would make it impossible to utilize the ROSE net through those
nodes, then we oughta keep it, at least for the time being.

This despite the fact that I see little or no use for ACTUAL digipeating
through a node in this day 'n age, and would rather that function was simply
unavailable.

I consider compatability issues to be most important. If it comes to a
choice of compatability VS xxxx, then no matter how much I believe in xxxx,
I'll still be willing to chunk it in the interest of maintaining compatability.

I should probably said DIGIPEAT FUNCTION, rather than DIGIPEATING.

I think I was just unclear, and gave you the wrong impression there. Sorry!

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

When all else fails, read the instructions.

228. Re: KPC-9612 and Linux

From: iialan@iifeak.swan.ac.uk (Alan Cox)
Date: Wed, 19 Jul 1995 09:35:25 +0100 (BST)
To: srbible@cs.nps.navy.mil (Steven R. Bible)
Cc: tcp-group@UCSD.EDU, netsig@tapr.org
Message-ID: <m0sYUbG-000140C@iiit.swan.ac.uk>
Rendered body type: text/plain

> As I suspected the Linux AX.25 code will only communicate with port one for
> transmit and receives both ports. I understand why. Kantronics uses the
> upper nibble of the KISS protocol to address the individual ports.

Correct on the port one count.

> So my question is, before I go in and modify the source code, has any
> already worked on this? My guess is that putting this feature in the kernel
> code would be benificial as it will also work for the Kantronics Data Engine.

Several people have asked for it, but nobody has done it. I sort of sketched
out how to do it but got no further since I don't have any TNC's, just a PI
card.

Alan

229. Meteor Scatter Modulation

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 20 Jul 95 06:05:19 UTC
To: girard@panix.com
Message-ID: <1268@paccomm.com>
Rendered body type: text/plain

One easy-to-try method is PSK using modems designed for communicating with
the Microsats. Non-US hams and commercial users have reported good results

with the units on HF SSB at 1200 baud.

That is still 1200, and still AX.25 protocol, but it makes an easy to
get started method for determining performance.

I tried some packet meteor scatter back in 83 or 84 during the perseids (sp)
shower. A gent in South Florida and I took turns trying to send to and
receive from two guys in St. Louis. We used TNC-1 1200 baud AFSK - that
was all there was then. I was running a 2m brick - what is that- about
150 watts, the Ft. lauderdale guy had 500. Don't remember what the St. Louis
guys had.

What we did was just depress the Enter key on the terminal so that frames
with only the sending station callsign and no data were transmitted. When
you see one it looks like W1BEL>CQ: on the screen, and if you have the
monitor time stamp on, the date and time are appended locally.

Results were that I copied ONE frame from St. Louis, and the Ft. Lauderdale
guy with a better antenna copied about 12. Again, don't remember what the
St. Louis results were.

Not a very good setup (2 meters vs 6, AFSK, etc.) but it did work a bit.
Subsequent to that I bought a 6m Kilowatt amp, two 6 element 6 meter beams
and was really excited about some serious ms work, but then we started
the PacComm business and I haven't done any hobby work since.

I hope you guys try some tests.

73,
Gwyn

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

230. X1J Suggestion

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Thu, 20 Jul 1995 02:36:06 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sYr5V-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
> Chaps,
>
> As for release 4, the source code will be published at the same time
> as the binaries.
>
> Dave
> G8KBB
>

Dave, etc...

Would it be possible or reasonable to either remove, or make optional,
the function in a NetRom node where a connection to a call sign is
looked up in the nodes table and the path taken to the node if one is
found. There are times when it would be useful to attempt a direct
RF connection to the call sign instead of following the node routing.

An example is where we have two sets of node pairs. Under normal
conditions traffic from SWT to GTF goes SWT-(#SWT)-(#GTF)-GTF on
UHF. Last winter the #SWT transmitter drifted off when it was
a bit cool (-20F) and the UHF path was useless until it warmed up.

If a user could connect from SWT to N7AGP (the GTF call) and have
it use the direct route instead of the UHF path, it wouldn't
be necessary for a node-op to be making routing changes to keep the
traffic flowing.

Another time when this capability would be useful is for testing paths
before a Node broadcast is heard or in spite of hard-coded routings.

73,
Bill

Reply-To: vodall@bigsky.dillon.mt.us

Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

231. Re: [NETSIG:1617] Alleged "flame war"

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 20 Jul 95 07:10:57 UTC
To: netsig@tapr.org
Message-ID: <1279@paccomm.com>
Rendered body type: text/plain

Charles,
I guess there are different levels of flames. You don't consider your postings to be inflamatory, I think they definately are. Another item to hold different opinions about.
73,
Gwyn

Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

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232. Re: [NETSIG:1615] Re: Bulletins vs Mail

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 20 Jul 95 07:18:51 UTC
To: netsig@tapr.org
Message-ID: <1283@paccomm.com>
Rendered body type: text/plain

Personal observation about the purpose of digital networks.

I lean toward the idea of a network doing more than forwarding mail, especially in a store (on disk) and forward (next hour) manner.

In the early '80s when we all were so excited about the potential of packet and thought 1200 bps was fast enough (1200 baud phone modems cost $500 then) I was sorely disappointed that so few people tinkered with real time applications - remote computing, if you will.

I spent every spare moment on packet back then when one digipeater was a network! I loved to DX on packet and had a great time with 2m band openings. Every morning I'd be on the air at 0530-0600 trying to work the BBS of K4NTA across the state (Florida).

In the summer of 1985 I put my Tandy Model 100, TNC, and HT in the car and operated packet mobile on a trip from Florida to Maryland and back. What a blast.

When I returned home, the first 'forwarding BBSs' had been implemented and the DXing of BBSs became naughty, and I have been on the air less and less since. The two guys who were trying to do interactive remote control work with their C-64s had to move to a private frequency since they interfered with BBS forwarding. For a while, I provided digipeater support for their experiments.

So much for reminicing (sp). Just one man's opinion regarding the concept that all we need (all we want?) is a better RF system for letting BBSs forward inane messages. When I ask, "is that all there is?" I still answer "No."

BBS forwarding is an application which makes use of a network, it is not the network.

73 to all,
Gwyn

Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

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233. Re: [NETSIG:1631] X1J Suggestion

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 20 Jul 95 08:19:08 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c4a@ram.net>
Rendered body type: text/plain

>
>>
>> Chaps,
>>
>> As for release 4, the source code will be published at the same time
>> as the binaries.
>>
>> Dave
>> G8KBB
>>
>
>Dave, etc...
>
>Would it be possible or reasonable to either remove, or make optional,
>the function in a NetRom node where a connection to a call sign is
>looked up in the nodes table and the path taken to the node if one is
>found. There are times when it would be useful to attempt a direct
>RF connection to the call sign instead of following the node routing.
>
>An example is where we have two sets of node pairs. Under normal
>conditions traffic from SWT to GTF goes SWT-(#SWT)-(#GTF)-GTF on
>UHF. Last winter the #SWT transmitter drifted off when it was
>a bit cool (-20F) and the UHF path was useless until it warmed up.
>
>If a user could connect from SWT to N7AGP (the GTF call) and have
>it use the direct route instead of the UHF path, it wouldn't
>be necessary for a node-op to be making routing changes to keep the
>traffic flowing.
>
>Another time when this capability would be useful is for testing paths
>before a Node broadcast is heard or in spite of hard-coded routings.
>
>73,
>Bill
>
>Reply-To: vodall@bigsky.dillon.mt.us
>Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>
>

I would like to second that and expand a bit...

If the destination callsign has an SSID or a digipeater path is specified it
would be nice to have it exclude the node name search...

This would allow access to ROSE applications independent of other node
settings.

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

234. Re: [NETSIG:1633] Re: Bulletins vs Mail

From: Steve Stroh <strohs@halcyon.com>
Date: Thu, 20 Jul 1995 05:53:23 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.950720053416.19485A-100000@chinook.halcyon.com>
Rendered body type: text/plain

On Thu, 20 Jul 1995 gwyn@paccomm.com wrote:

<snip>

> So much for reminicing (sp). Just one man's opinion regarding the concept
> that all we need (all we want?) is a better RF system for letting BBSs
> forward inane messages. When I ask, "is that all there is?" I still
> answer "No."
>
> BBS forwarding is an application which makes use of a network, it is not
> the network.

Gywn summerizes well why the Puget Sound Amateur Radio TCP/IP network
exists- because BBS'ing ISN'T "all there is". On the same box, an average
user can have multiple telnet sessions open, one of which is almost always
to the global (via Internet) chat system, simultaneous FTP's, receiving
and sending peer-to-peer e-mail (no BBS needed, thank you very much), and
more.

Further flame bait: We happily and productively make user of the Internet
and other wormholes. We make use of radio for the user segment in the
local area. We have an internet login available to licensed hams without
packet capability (yet) to "try it out". We're putting up WWW pages for
both Internet and RF access. Far from "killing" RF links, we're adding
them as the user base grows to the point where we can solicit donations
for new sites. We hope to erect a linking repeater on one of the better
mountain sites, possibly later this summer. We're sharing, we're growing,
we're having fun.

Urk. There's that word. Fun. In conjuction with what has become
other endangered terms in Amateur Packet Radio- growth, and sharing.

Even more flame bait: I hate to dissapoint the "TCP/IP doesn't work over
radio" contingent represented on this list, but TCP/IP works very well
indeed over radio, especially at 9600 baud. When we discussed the notion
that "TCP/IP doesn't work over radio" at the monthly TCP/IP meeting last
night, the response was, well, amused.

<sig snipped>

Steve N8GNJ

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

235. Re: [NETSIG:1635] Re: Bulletins vs Mail

From: paul@paccomm.com
Date: Thu, 20 Jul 95 10:39:53 UTC
To: netsig@tapr.org
Message-ID: <1311@paccomm.com>
Rendered body type: text/plain

Well said, Steve.
What you didn't add was that you're using RIP to great effect
over there on the West Coast.
Keep up the good work.......

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~    .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \______________/
                                                    ~~~~~~~~~~~~~~~~~~~~~~~
```

236. Wire vs RF.

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Thu, 20 Jul 1995 11:09:09 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507200913.A20700-0100000@gateway.utilpart.com>
Rendered body type: text/plain

People, I have observed that this argument appears to be a no win
situation. We are spending too much bandwidth on a subject that seems to
have taken MORE than it's share of bandwidth on this list. Instead of
putting our minds to more important things like tropo and MS and how to
make these networks better and perhaps make more of the land line links
secondary to RF links, we are spending all our energy in what really boils
down to a flame war.

Now I have been setting here thinking about all this (that we are going to
move all this long haul stuff to wire if we don't quit using the wire) and
am also thinking about the number of people who at least here in the state
of Florida are working towards a statewide RF network, and you know
something,that number is growing, even though we do have wire line links.
And in the shadow of those wire line links the RF paths ARE GETTING BETTER
and BETTER!

I believe that for most of us the wire line links are like a airplane, it
gets me up there in the air and then down again at some other place, the
RF paths and links are more like the mountain, I climb it because it is there
NOT because it is easier or better than the wire line paths. (I can and do
dream of perfect RF paths though 8-})

All this energy we have spent urinating up wind would have been better spent trying to help others build those RF links, trying to help TAPR and AMSAT raise the needed $$ to put up that satellite that would be a big step towards making some of those RF path dreams a reality.

Look at it this way, I think VSAT terminals are down to about $10 grand each, that was about the price of a SITOR box back when Peter Martinez G3PLX made AMTOR a house word in the amateur home with his little kits for about USD 175 each. I bought and built two of them. As the things were put on the market by AEA and others, a lot of ships bought them and replaced the expensive SITOR boxes with those cheap, but very good (I used to talk to several "sparks" who used the amateur box because it WORKED better than the commercial $10k version), now to get back where I was, VSAT is about what SITOR cost back in those times, I think that it maybe that we are in the look for a new "low cost ham response to the high dollar VSAT boxes, true these will not be used commercially because our birds are on ham freqs, but what I trying to say is we need a new g3plx and the bird up in the sky for him to work against.

All of this hot air could have been used more productively to promote and exchange information on sats carrying network links, long haul network trunks over tropo and other thin paths. Even the somewhat (to some) mundane information on how to make your switch/node site more power company independent, lightning resistant. (gound gound and more ground). How come we have to blow out loads of energy cutting and doing damage to one another rather than just letting the dead dog lie.

Howie gave a good example with the old protocol wars, I think we all know now that there is NO ONE DO IT ALL PROTOCOL. We have ended up using hybrids of both of the standard bearers. Datagrams over VC's VC's end to end with datagrams.

Wire line and RF will be the same thing, if Florida is any example, the RF paths seem to be growing FASTER with the appearance of the wire line links, I believe that is caused by the fact that many of us view the RF side like building a model railroad, the more of it we make work our selves the greater joy we gain out of it. So this inherent desire to replace the wire line links with RF because it is radio, I believe will keep the RF paths growing. Now if this is not true in YOUR area then YOU have a PROBLEM in YOUR area but please do NOT project it into MINE. We may have our internal problems (who's BBs is better ect) but we have people working, in many cases with their own funds to build a RF network, even though the ports and facilities are there for wire line.

Another example, I can ask any BBS sysop or switch op around here what paths he/she has out of his/her facility, they will ALWAYS tell you about the RF paths first, then they will tell you about the wire line links, why?? because the RF links are their pride and joy, that is what they are in this hobby about, but the wire line links make up for the missing paths, but this does not stop them from putting $$ into building better or new paths that go where the wires now go, indeed they are the first to offer help or money to replace those wire line paths with RF.

So I believe that in at least the area I live in, the tendency seems to refute the arguments of those who would have us totally abandon the wire links because they are not RF.

Now people, I will no longer respond to this theme, it is a wast of time and a exercise in futility, no one's mind is going to change, it is only polarizing us and making us more divided. I am going to go back to exchanging ideas with Orv and Jack and others on tropo and MS links (they are RF) and will continue to exchange info over any path that is available to me, with preference to the RF paths when I have them.

While those of you who want to continue this stupidity may do so, I and many others will continue to work on better RF paths. Please do not clutter a perfectly good sig up with such wast of time and space.

All flames will go to /dev/null on this machine (linux) or d:/nul on my OS/2 machine.... In fact I may just send this whole theme to those to places on my machines... All it does is make me mad when I read it...

Sorry, but I have more important things to do like BUILD that RF network.

When I see proponents of totally different networking types set down on this list and discuss how to make each others protocol work better and even offer to try the other system out, and then I have to witness this sort of stupidity, I really wonder why people bring these things up unless it

is to divide and bring down what looks like a working SIG. IMHO I
believe that some of the flame throwers have move over hear because
they lost their audience on other sigs. They wore their welcome out
elsewhere and have moved here so as to generate a new audience. The
purport themselves to be humble beginners and then lash out at people
who have quietly been at this stuff for years, doing things that none
of the others who may have the knowledge to do so would even attempt to
do. To those I can only state a short saying from the spanish language,
if you do not understand it you will have to go get a good spanish
speaker to translate it for you because there is no way to properly
translate it into English, but it says very well what I am trying to
say here. Beware...

Sabes tanto que sabes a mierda...

I certainly have seen a falling off of good exchange of data here, I am
sure that many others have sort of pulled back until the flaming and
anti-social behavior dies down.

flames to /dev/null
flames > \nul

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

237. Re: [NETSIG:1616] Re: Networks real and imagined

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 09:24:34 PDT
To: netsig@tapr.org
Message-ID: <9507200924.ZM14940@hanko>
Rendered body type: text/plain

On Jul 19, 3:16pm, Gary L. Grebus wrote:
> Subject: [NETSIG:1616] Re: Networks real and imagined
> >
> >On Jul 17, 4:42pm, Karl F. Larsen wrote:
> >> Subject: [NETSIG:1579] Re: Networks real and imagined
> >>
> >>   Hank, you make me mad at times. You choose to belittle what
> >> others think because they do not conform to your thinking. Now rather
> >> than comment to your comments here is a restatement of what I said.
> > >
> >
> > To which Hank Oredson replied:
> >
> > >I'm sorry you think that is what I was doing.
> > >
> > >I was complaining about those folks who's actions may very well
> > >destroy the precise topic this SIG is designed to promote.
> >
> > Since you label those who disagree with you as "LL lids", it seems
> > you want to belittle them, rather than discuss their ideas.

I am always glad to discuss those ideas, in the appropriate forum.
This forum is about ham radio networking (building networks using
ham radio) and not about the use of the telephone.

Anyone who thinks using the telephone to "create a network"
should go and form their own SIG to discuss those isssues.

The folks who keep trying to turn this forum away from ham radio
networking and into a "how to use the telephone" forum, are, in
my view "LL Lids" ... unable or unwilling to actually USE ham radio,

they try to divert this group from it's goal. Let them establish
their own forum for these discussions, and please get out of the
way of those of us who wish to use this forum for it's intended purpose.

> I'm certain there are people who will find doing a "long haul ham
> radio network" a worthwhile end in itself. But there are interesting
> applications, which use ham radio, and which that network is never
> going to be able to carry. The 750 bps HF links which you advocate as
> components of this network are an order-of-magnitude slower that what
> is interesting even today.

If you are not interested, then stop yapping about them and let
those of us who ARE interested get on with building a network.

Your assignment is to explain what you would do INSTEAD of 750 bps
on HF, how you would do that, and to propose a way to move forward.

> >
> >If we wish to change the charter of these SIGs to "networking FOR radio
> >amatuer use" instead of "networking using amateur radio" then the view
> >you espouse might make sense. For the present charter of these groups,
> >your view provides much more harm than good, and I for one would prefer
> >to see it removed from the discussion.
>
> It seems to me that any network which uses any links over amateur
> radio qualifies as "networking using amateur radio", and I would
> prefer to see the discussion move forward on that basis.

I think you are dead wrong. Charles and I have both presented arguments
for NOT using commercial links, and have shown a few examples of why
doing so is bad. If you have a counter argument, please present it.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

238. Re: [NETSIG:1614] Re: Networks real and imagined

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 10:26:25 PDT
To: netsig@tapr.org
Message-ID: <9507201026.ZM15030@hanko>
Rendered body type: text/plain

On Jul 19, 9:31pm, Bill Vodall wrote:
> Subject: [NETSIG:1614] Re: Networks real and imagined
> >
> > Pleas folks! The internet is not in *any* way a part of the ham radio
> > network! Is this so hard to understand?
>
> Hank,
>
> This is your "OPINION".   It can be argued that since the Internet
> carries ham traffic and is used to encapsulate NetRom connections it
> is indeed a part of the ham radio packet network even if it's not using
> RF.

Oh ... ok ... that is YOUR opinion. Please take the discussion of
the telephone parts of this network elsewhere, it is getting in the
way of the discussion of how to build ham radio networks - networks
connected via radios owned by licensed hams.

> > If the internet is indeed a
> > "vital link" that makes the ham radio network possible, then I am proved
> > right, and the ham radio network *will* be dead in that 12-36 month
> > time frame.
>
> Again, this is simply your opinion. You have some very relevant concerns
> about the lack of interest in HF message trafficking and I believe anybody
> doing LL forwarding should consider them for a moment before choosing
> to continue.

And I repeat: if they choose to continue that is fine with me. However,
it is not "ham radio networking" but is "a ham using the telephone".

Not a topic for discussion on this SIG.

> My opinion is that the Internet connections will allow us to do things
> that are, for the most part, impossible with RF paths. It will bring more
> users and better networks to local hubs. It is a good thing!

Examples please. Not "telephone line" examples, but RF, using a radio,
over the air, ham radio examples. Of course I can do DIFFERENT things
using the telephone than I can using ham radio ... good heavens, I can
call my mother directly on the telephone ... but that is not ham radio
in ANY sense of the word.

> If the RF forwarding network is totally replaced by the cheap, easy and
> reliable connections provided by the Internet, is that the fault of the
> Internet or of the backward state of the technology and politics
> involved in the existing RF network?

I claim it is the fault of radio amateurs who place other interests
ahead of their interest in ham radio. If they WERE interested in ham
radio, they would spend the time and energy working on ham radio solutions
instead of commercial networking solutions. It's that simple.

Yup, I'm a bigot on this topic.

> > a "LL Lid" and
>
> Perhaps this term has been a bit over-used?

Perhaps not. I just invented it last week. Expect to hear a lot
more of it.

> > Good news! Lots of us are already on air with 750 bps capability.
> > It works, and it works well. Spend the $395 for a modem and join us.
>
> Here's some real questions to make up for my expressing some
> well known beliefs that folks are getting tired of hearing about:
>
> What would happen if a thousand new hams attempted to join the RF forwarding
> network with CLOVER boards? Would we be able to build a real network that
> keyboarders and game players could use? Does CLOVER software use the same
> tired old point-to-point-to-point means of bulletin passing instead of some
> better broadcast protocols? Is CLOVER affected by hidden transmitters?
> How would CLOVER be affected if multiple stations were on a single frequency?

What do you want to build? You will be helping to build it, if you
choose, so you get to help design it. You tell all of us what you
want, and if it is ham radio you will get lots of help building it.

> How would the overall throughput of a point-to-point-to-point CLOVER
> network compare to a hub system using tired old 300 bps packet to
> broadcast bulletins simultaneously to hundreds of local hubs with HF
> packet receive-only capability?

Do the experiment and find out. I'd probably sign up to help with this
particular experiment.

> CLOVER is much better technically than packet, and it's cheaper than it
> was. Still, in my opinion, it is a cadillac of HF communications
> that will be the playground of a select few. It, and the other better
> protocols such as PACTOR and GTOR, are what we need to pass the personal
> messages. The Internet will continue to grow as a preferred mode until a
> better means of bringing the bulletins easily and cheaply to the
> masses is found.

You compare apples and aardvarks again. The internet is not ham radio.

>
> >   ... Hank
>
> Bill
>
> vodall@bigsky.dillon.mt.us
> wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>
> ps.. I forward these discussions on to our local packet network.
> There have been several cases where I've had to not pass on a brief message
> with good points because it was followed by hundreds of lines of quoted old
> messages. Short messages work much better.

These ARE short messages, at least in some packet networks!
Sounds like your packet network needs a lot of work.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

239. Re: [NETSIG:1630] Meteor Scatter Modulation

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 10:30:17 PDT
To: netsig@tapr.org
Message-ID: <9507201030.ZM15036@hanko>
Rendered body type: text/plain

On Jul 20, 5:30am, Gwyn Reedy, W1BEL wrote:
> Subject: [NETSIG:1630] Meteor Scatter Modulation

...

> I tried some packet meteor scatter back in 83 or 84 during the perseids (sp)
> shower. A gent in South Florida and I took turns trying to send to and
> receive from two guys in St. Louis. We used TNC-1 1200 baud AFSK - that
> was all there was then. I was running a 2m brick - what is that- about
> 150 watts, the Ft. lauderdale guy had 500. Don't remember what the St. Louis
> guys had.

Took part in the 84 "packet via MS" test during the perseids, with 200W
to pair of boomers at 120 feet, pointed due west from Massachusets.
Got two heard reports, and heard two decodable packets. Not very encouraging.
This was 2M FM.

(just another data point)

...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

240. Re: [NETSIG:1631] X1J Suggestion

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 10:32:23 PDT
To: netsig@tapr.org
Message-ID: <9507201032.ZM15058@hanko>
Rendered body type: text/plain

On Jul 20, 6:10am, Bill Vodall wrote:
> Subject: [NETSIG:1631] X1J Suggestion

> If a user could connect from SWT to N7AGP (the GTF call) and have
> it use the direct route instead of the UHF path, it wouldn't
> be necessary for a node-op to be making routing changes to keep the
> traffic flowing.

A connect to the alias with SSID will accomplish this (c gtf-4).
You need to disable callsign validation for this to work.
Is supported in BPQ, NET/ROM, and JNOS for certain.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations

Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

241. Re: [NETSIG:1631] X1J Suggestion

From: Jtaylor@usacec-osigw.army.mil
Date: Thu, 20 Jul 95 10:32:38 MST
To: netsig@tapr.org
Message-ID: <199507201800.NAA11746@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

If I understand the suggestion correctly, couldn't your objective of bypassing the defective UHF link be accomplished by simply perming the VHF link in with a path quality parameter higher than assigned to the UHF link?

(This might be a case where automatic link path quality assignments based on retries would be useful. As the UHF link drops off frequency, the retry rate would increase, decreasing the path quality value until it's lower than the VHF link. This would cause the routing to automatically switch over to the VHF link).

73 de Jack

242. Re: [NETSIG:1637] Wire vs RF.

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 20 Jul 1995 13:06:13 -0500
To: netsig@tapr.org
Message-ID: <199507201806.NAA19322@ns1.texoma.com>
Rendered body type: text/plain

Accoding to Chuck...

>People, I have observed that this argument appears to be a no win
>situation. We are spending too much bandwidth on a subject that seems to
>have taken MORE than it's share of bandwidth on this list. Instead of
>putting our minds to more important things like tropo and MS and how to
>make these networks better and perhaps make more of the land line links
>secondary to RF links, we are spending all our energy in what really boils
>down to a flame war.

See NETSIG 1617 "Alleged flame war".

Chuck's message was 9k.. A recent posting by Brian Lantz was 8k.

One of my postings a few days ago was 7k, and I was told several times that what I had written was TOO LONG for the SIG.

(Yawn)

As for Chuck's posting, it seems like he sure did blow a lot of hot air, complaing about people blowing hot air..

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

It crawled into my hand... Honest !!

243. [NETSIG:1639] Re: Networks real and imagined -Reply

From: Orville Beach <Orv@micom.com>
Date: Thu, 20 Jul 1995 11:29:17 -0800
To: netsig@tapr.org
Message-ID: <s00e3ee0.099@micom.com>
Rendered body type: text/plain

Hey, Hank -

What's your view on phone patches? After all, they let hams talk long distances over non-RF links (and it's being done routinely on repeaters). They also let hams talk to non-hams, just like the internet connections popping up all over.

Would you put phone patches in the same category as 'phone links'? "Not real ham radio"?

Just curious; been having a similar debate locally..

73 - Orv - wb6wey
orv@micom.com

244. Re: [NETSIG:1639] Re: Networks real and imagined

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 20 Jul 95 14:28:34 UTC
To: netsig@tapr.org
Message-ID: <1344@paccomm.com>
Rendered body type: text/plain

Is Hank the SIG moderator? He seems hard-over on what the purpose of the
SIG is and isn't. Thought that was a group or moderator decision...

_ _
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

245. Re: [NETSIG:1643] Re: Wire vs RF.

From: hank@cospc.com (Hank Pustarfi)
Date: Thu, 20 Jul 1995 14:40:42 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <m0sZ0WZ-0005UdC@bonzai.cospc.com>
Rendered body type: text/plain

Will someone PLEASE create a internet-non-advocacy.sig, or what ever you
want to call it, and get this crap off of of the netsig. This type of
'hipe' and the name calling has only fragmented those that are trying to
advance the art. People will do what they want to do... I have had my fill
of this. Lets get on with what this sig was started for. There isn't a
thing that this ranting can do to further packet radio.

Hank k3wgv

246. Re: [NETSIG:1566] Re: Re: microwave

From: pipe2@oeonline.com
Date: Thu, 20 Jul 95 14:45 EDT
To: netsig@tapr.org
Message-ID: <m0sZ0bd-000ADzC@oeonline.oeonline.com>
Rendered body type: text/plain

<stuff deleted>

>When I first asked about 10 GHz data links using Gunnplexers, I was told that
>it was possible. I was also told that both tranceivers were temperature
>sensitive and would have to be placed where they would have a fairly constant
>temperature. As far as the TX and the RX staying locked as they drift, they
>might using simplex. But if the temperature between the two sites varies by
>more than a few (I could not get exact numbers out) degrees they will not
>stay locked. The frequency drift is a severe problem with the Gunnplexers,
>especially if they will be placed on a mountain. If you are talking about
>temperature changes of 30 to 40 degrees in a 24 hour period you will see the
>temperature drift a LOT (also not exact). What I think a lot means is a 100
>MHz or more. That is a lot of drift when you are talking of a signal of only
>about 200 KHz. Also when it drifts that much I don't think the RX and TX
>will drift the same amount.
>
>When you look at allowing the frequency to drift when working duplex it is an
>entirely different ball game. If you TX at 10.2 GHz and RX at lets say 10.4
>GHz you have to have very steep band pass filters on the RX. The filters
>would remain rock solid as the TX on the other end of the link drifted right
>out of the pass band. The result would be no data passed and a lot of
>expensive equipment up on the hill doing nothing but cooking bugs.
>
>This may work on simplex if both ends of the link were in air conditioned
>buildings and you used the frequency drift compensation design. How many of
>us have access to air conditioned buildings on hill tops. I do, but am still
>inclined to look to a crystal controled 10 GHz tranceiver for the link here.

I have thought about using gunnplexers in outdoor locations (i.e. not
temperature stable), and have thought that Peltier junctions would be ideal
for controlling the temperature of the gunnplexer. A peltier junction acts
as a solid-state heat pump, that is it moves heat from one side to the other
activly when powered. The direction of the heat transfer is controlled by
the polarity of the DC drive current. By building a Peltier junction into
the case of the gunnplexer (PVC pipe, Al, whatever), and building a
temperature sensor inside the case, you could activly control the

temperature inside the case. The Peltier junction could move heat into the
case when it was to cold and it could move heat out of the case if it became
to hot. Wrapping the case in 1/8" foil-backed insulation would help to
maintain the temperature within the case (important since Peltier junctions
draw *alot* of current - about 3-5 amps for one square inch).

        -Bill kb8wyp

247. Re: [NETSIG:1644] Re: Networks real and imagined -Reply

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 12:01:34 PDT
To: netsig@tapr.org, bbssig@tapr.org
Message-ID: <9507201201.ZM15213@hanko>
Rendered body type: text/plain

On Jul 20, 1:36pm, Orville Beach wrote:
> Subject: [NETSIG:1644] Re: Networks real and imagined -Reply
> Hey, Hank -
>
> What's your view on phone patches? After all, they
> let hams talk long distances over non-RF links (and
> it's being done routinely on repeaters). They also
> let hams talk to non-hams, just like the internet
> connections popping up all over.

I think they are great!
Just like I think the internet is great!

> Would you put phone patches in the same category as
> 'phone links'? "Not real ham radio"?

Of course not. The topic here is how to build a network using
ham radio. Some folks have suggested NOT doing this, but using
a commercial network INSTEAD. So the similar question would be:

"What do you think of shutting down the voice repeater and
instead renting a conference bridge from US West so that hams
can talk to each other more easily."

My response would be as you expect: "Gee that's neat, why don't
you go discuss it somewhere else, on this SIG we are discussing
how to use radios for communications."

I find it interesting that there has been no or little response to
several questions I posted, some of them quite awhile ago:

1. Has anyone created a BPQ front end driver for CLOVER, AMTOR,
PACTOR? Is anyone working on one? Seems like this might help
with long haul network linking.

2. Where can I find a technical spec for ROSE (enough information
to do my own ROSE implementation). Maybe I simply missed the
answer to this one.

3. What actions can we take to cause the adoption of standards in
the bbs addressing/forwarding area? The NA/NOAM battle continues,
without resolution in sight. Can these SIGs do anything to cause
a standard to be adopted?

4. It is clear from many comments that interest exists in improved
BBS (and other application and networking) software. Can these SIGs
come up with some recommendations? I've seen postings from 2 or 3
folks with good ideas for the BBS systems, a little less from the
networking side.

Some other obvious topics these groups might address:

5. How can we better coordinate and optimize the use of existing
resources? Examples: network connectivity across boundaries between
regions/clubs/metro areas/protocols; coordination of the HF forwarding
networks; internetworking issues between applications running on
different protocols.

6. How can we influence the manufacturers of radios and modems to more
quickly provide higher speed/more capable/cheaper products to help
us build a better network?

Sure, the flame wars are fun, but I think they are a symptom of our
inability to actually influence what is going on out there in the world.

... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

248. Re: [NETSIG:1637] Wire vs RF.

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 20 Jul 95 15:05:46 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c4b@ram.net>
Rendered body type: text/plain

Let us do our own thing in each region.

My PERSONAL view is that wire is ok IF it is bridging a 1000 mi or more gap
in RF coverage.

tom

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

249. Re: [NETSIG:1646] Re: Wire vs RF.

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 12:08:24 PDT
To: netsig@tapr.org
Message-ID: <9507201208.ZM15218@hanko>
Rendered body type: text/plain

On Jul 20, 1:58pm, Hank Pustarfi wrote:
> Subject: [NETSIG:1646] Re: Wire vs RF.
>
> Will someone PLEASE create a internet-non-advocacy.sig, or what ever you
> want to call it, and get this crap off of of the netsig. This type of
> 'hipe' and the name calling has only fragmented those that are trying to
> advance the art. People will do what they want to do... I have had my fill
> of this. Lets get on with what this sig was started for. There isn't a
> thing that this ranting can do to further packet radio.

It's a deal. Remove both the "for" and the "anti" discussion of
the use or commercial networking and let's talk about ham radio
instead. Your point is EXACTLY what some of us have been asking:
stop babbling about things off the topic of these groups, like
how to use commercial networks.

What was the topic you wanted to discuss?

... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

250. Re: [NETSIG:1648] Re: Networks real and imagined -Reply

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 20 Jul 95 15:52:33 UTC
To: netsig@tapr.org
Message-ID: <1362@paccomm.com>
Rendered body type: text/plain

Hank - good message listing items for discussion.

In response to point 6 regarding how to get manufacturers to create better
lower cost products faster (to support networking):

My answer is reducing the manufacturers' risk by adopting standards and implementation plans. I mean getting folks to agree to and really mean to follow them, not devolve into opinion groups like this SIG. That will not be easy to do. Organizations fail to commit, and individuals argue. The standards will not be optimum (to gain consensus) and therefore will be bad-mouthed by the tech types.

Two examples:
AX.25 as supported in code by Tapr (last decade). I spend our software efforts on user bells and whistles because the protocol is worked out and secure. It may not be wonderful, but supporting it doesn't consume resources.

Perhaps the K9NG/G3RUH modem is another example. All the manufacturers have converged on this defacto modulation standard.

A small company can only spend so much on research and can take only so many risks or it is out of business. (Aside or sermon: So few Americans have any understanding of the economics of business, and they are not helped by the mass media and politicians. Some recent comment on the AMSAT BB-SIG about manufacturers lining their pockets really made me squirm - it just doesn't work that way, and besides if I was able to make enough to retire handsomely it would be well earned with a decade of 80 hour weeks and risk of all personal resources. end sermon - sorry)

So how do we decide what to spend our research on and bring to the amateur market? If it has some appeal to the commercial marketplace, then the risk is reduced since if the hams ignore it, there is still another market. If it is backward compatible with previous standards then the risk is reduced. Or if there has been a lot of talk and discussion about it, then there is a better chance it will be accepted.

Dangers: You put a lot of time and money into something like a 56kb G3RUH modem or a PACTOR-II or a 56kb WA4DSY modem and you get the following responses: It isn't the right way to do things, or it is too expensive, or why did you use this CPU and not that CPU, etc.

Ham Radio is a tough market. Small markup, fickle/fadish customers, huge technical support burden, and the public awareness problem. The latter is the fact that the customers are communicators, and therefore they can spread good or bad word quite quickly. That is ok in itself, in fact an advantage if you make good products, but the sorehead problem is tough. (I know you never meet a sorehead on these SIGs, HI, but you see the problem with a customer who is ill equipped to understand what he is doing, and won't/can't admit it and wants to broadcast to the world his problem with unit x. There is no way to break even in that kind of deal.)

So what is a plan? It sets a long term goal that all can accept, then sets shorter term achievable milestones to work toward. Those short term steps are NOT optimum - the optimum is the achievement of the final goal. Achievable is the key word - what is a step forward that we can begin taking now so that we get some satisfaction from the progress, and it not be a dead end but a step to something better later on.

Begin self-serving advertisement portion:
PacComm has made available a low cost 56kb capable TNC. On the market for over a year now. We have picked up manufacturing and marketing the Gracilis products which are a step above typical TNC products in horsepower. They make a great network switch. Now we are going to be manufacturing and marketing the WA4DSy 56kb MSK modem (second design). If that isn't helping to do networking, I don't know what to do. What is missing is the radio. We're looking at some designs, but can't say if we'll be able to market a product or not.

In the HF arena, we pionered PacTOR in the US, and now offer PacTOR-II. It is high-tech and expensive, but it is a tool you can call up and take delivery of. (I would be marketing Clover but Bill Henry has resisted dozens of requests to license the design over the past 4 years.)

End self-serving advertisement portion.

Summary: If people agree on what they want/need that forms a market. If I am confident there is a market, I'll produce a product for it.

Best regards to all,
and thanks for the bandwidth.

Gwyn

_ _

Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

+(813) 874-2980 Fax:+(813) 872-8696 BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

251. Re: [NETSIG:1597] RE: ACL/digipeating

From: shawnpat@sierra.net (Shawn Skinner)
Date: Tue, 18 Jul 1995 08:22:46 -0700
To: netsig@tapr.org
Message-ID: <199507190825.AA29579@diamond.sierra.net>
Rendered body type: text/plain

>> Chuck Hast wrote:
>>
>It still is though we have taken to using some special non-CO numbers for
>dedicated applications ect. For instance, a BBS here in the Tampa area
>has a address of 813105... It belongs to a repeater group which runs a
>repeater on the 147.105 mhz freq. Sooo, since it is on a dedicated address
>and does not cover a area associated with a telco exchange, we have used
>the 105 address to aid in association.
>
>--
> Chuck Hast e-mail wchast@gateway.utilpart.com
>

With the New North American Calling plan, the area codes and the
prefixes will include the entire number set. This is why states
are now having to use their area code to dial in-state.

What is the plan for Rose, or does this effect rose at all?

de Shawn, N7XBM.
shawnpat@sierra.net Shawn Skinner

252. Re: TCP/IP Disadvantages

From: willi_r@mail.uwlax.edu
Date: Thu, 20 Jul 95 16:11:46 -0500
To: netsig@tapr.org
Message-ID: <9507202111.AA08411@mail.uwlax.edu>
Rendered body type: text/plain

I have seen it stated by some on the TAPR sigs, that TCP/IP is not a good
mode for amateur radio and I am perplexed by this. I went back and spent a
considerable amount of time reviewing past Status Registers which seem to
indicate to me that TAPR considers TCP/IP to be one of the best, if not the
best, protocol for networking. Also, recent articles in QST seem to suggest
that ARRL staff also view this as the protocol to look toward.

Could you please enumerate the disadvantages of TCP/IP in rf paths?

Rick, KV9U

253. Re: [NETSIG:1625] RE: ACL/digipeating

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Thu, 20 Jul 1995 23:14:23 +0200
To: netsig@tapr.org
Message-ID: <199507202113.XAA05889@unix10.pressimage.fr>
Rendered body type: text/plain

>Was not very clear - we are looking for "new and interesting toys
>for the users to play with". APRS is one we are in the process of
>playing with, but we are looking for more. Some users want to "play
>with the networking" rather than "play with networked applications"
>so we are scouting about for toys for them to play with.

You're right. I've just been told, for example, about a new application that
runs on a PC/Flexnet switch: It's a channel-conference just like IRC: You
choose a channel, you name it, and users from ALL THE NETWORK will be able
to join..

I haven't seen it, nor tried (it's only alpha version) but i'm sure user
will appreciate.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
> F1JKJ@planete.net < Public Key on mail servers

Fidonet 2:323/27.1
Compuserve ID 100407,436

254. Re: [NETSIG:1620] RE: ACL/digipeating

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Thu, 20 Jul 1995 23:14:18 +0200
To: netsig@tapr.org
Message-ID: <199507202113.XAA05886@unix10.pressimage.fr>
Rendered body type: text/plain

>C USER Via NODE,Address
>And you are DONE.

Exactly like in Flexnet, but you don't need to know that F1JKJ is
1879783729372 to connect him...

>It is the ONLY AX.25 networking solution that gets all the network level
>information from outside the data field of the AX.25 frames. For this reason
>ANY AX.25 application can be used through ROSE without any major
>modification. (No need to program in C NODE commands and messages)

WRONG ! You seem to have forgotten Flexnet. I agree that i understand why:
This system does not exit in USA... (for the moment, let's hope...)

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
> F1JKJ@planete.net < Public Key on mail servers
Fidonet 2:323/27.1
Compuserve ID 100407,436

255. Re: [NETSIG:1610] Re: Bulletins vs Mail

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Thu, 20 Jul 1995 23:14:28 +0200
To: netsig@tapr.org
Message-ID: <199507202113.XAA05891@unix10.pressimage.fr>
Rendered body type: text/plain

> Didn't see any answer to my question about the
>availability of ROSE that runs on a PC, is there such a thing?

Yes. FPAC is a french system that SHOULD work like ROSE but, IMHO, it is a
great waste of equipment, and also a loss of time (configuration, bugs...)

If you want to test it (you should speak french) Email me, i'll tell you how
to get it.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
> F1JKJ@planete.net < Public Key on mail servers
Fidonet 2:323/27.1
Compuserve ID 100407,436

256. Re: Wire vs RF.

From: willi_r@mail.uwlax.edu
Date: Thu, 20 Jul 95 16:46:47 -0500
To: netsig@tapr.org
Message-ID: <9507202146.AA08851@mail.uwlax.edu>
Rendered body type: text/plain

I think that the suggestion by some folks that there be different sigs to
cover the different areas of interest might work to reduce the extremely
hostile and often irrational comments. I suggest that netsig be divided into
three parts. NET-RF-SIG for those who believe that only rf should ever be
used in amateur radio networking, NET-WIRE-SIG for those who believe that
only wireline systems should be used in connecting local amateur radio
networks, and NETSIG for those of us who support the use of all kinds of
technology to network depending on individual interest and preference. The
NETSIG commenters would hopefully never try to reduce others enjoyment of
technology and the advancement of same.

Rick, KV9U

257. Re: [NETSIG:1653] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 15:06:27 PDT
To: netsig@tapr.org
Message-ID: <9507201506.ZM15452@hanko>
Rendered body type: text/plain

On Jul 20, 4:22pm, willi_r@mail.uwlax.edu wrote:
> Subject: [NETSIG:1653] Re: TCP/IP Disadvantages
> I have seen it stated by some on the TAPR sigs, that TCP/IP is not a good
> mode for amateur radio and I am perplexed by this. I went back and spent a
> considerable amount of time reviewing past Status Registers which seem to
> indicate to me that TAPR considers TCP/IP to be one of the best, if not the
> best, protocol for networking. Also, recent articles in QST seem to suggest
> that ARRL staff also view this as the protocol to look toward.
>
> Could you please enumerate the disadvantages of TCP/IP in rf paths?

A couple points:

1. No viable adaptive routing capability.
    Nodes come and go. Keeping one's routing tables up to date
    by hand is a major pain. With NET/ROM it is all automatic.

2. Application complexity. This is not, per se, a function of the
    protocol, but is a function of the application. To date, the
    only widely used tcp/ip applications have been baroque, obscure,
    poorly documented, and essentialy unusable by "J. Random Ham".

3. To date the ip implementations have been required to run on top
    of AX.25 (FCC requirement). Now that that requirement has been
    relaxed, perhaps we will see some "pure ip" implementations.

I did not address your actual question, except for point 1, because
I think it is actually points 2 and 3 that have caused most hams to
find tcp/ip unusuable over ham radio. Charles may have some other
references. I probably do, but they would be at home ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

258. Re: [NETSIG:1653] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 20 Jul 1995 17:06:18 -0500
To: netsig@tapr.org
Message-ID: <199507202206.RAA28651@ns1.texoma.com>
Rendered body type: text/plain

>I have seen it stated by some on the TAPR sigs, that TCP/IP is not a good
>mode for amateur radio and I am perplexed by this. I went back and spent a
>considerable amount of time reviewing past Status Registers which seem to
>indicate to me that TAPR considers TCP/IP to be one of the best, if not the
>best, protocol for networking. Also, recent articles in QST seem to suggest
>that ARRL staff also view this as the protocol to look toward.
>
>Could you please enumerate the disadvantages of TCP/IP in rf paths?
>
>Rick, KV9U

To my knowlege, TCP/IP works just fine for local stuff. (It does for me!)

The remarks about TCP/IP's failing in an RF environment are related to
long-haul paths. The NOS advocates state over and over again that for
long-haul networking to be usable and effective for TCP/IP, a commercial
carrier or Internet must be used to overcome the speed limitations over long
paths which radios impose on us.

In other words, it can't be done properly with radios. You must use the
telephone to get the speed required for large scale networking with TCP/IP.

This inability to use RF for long-haul networks using TCP/IP is what you
heard about.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

It crawled into my hand... Honest !!

259. Re: [NETSIG:1649] Re: Wire vs RF.

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 15:10:45 PDT
To: netsig@tapr.org
Message-ID: <9507201510.ZM15457@hanko>
Rendered body type: text/plain

On Jul 20, 2:21pm, Tom Moulton wrote:
> Subject: [NETSIG:1649] Re: Wire vs RF.
> Let us do our own thing in each region.
>
> My PERSONAL view is that wire is ok IF it is bridging a 1000 mi or more gap
> in RF coverage.

I do not believe we have any such gaps in the lower 48 states even
limiting consideration to 1200 baud (and above) and 2m (and above).

>From personal experience I know there are no such gaps in the HF
networks. Anywhere on the planet.

So the conclusion is that wire is *not* ok anywhere on the planet.

(and is impractical as we move off-planet ...)

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

260. Re: [NETSIG:1657] Re: Wire vs RF.

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 20 Jul 1995 17:11:51 -0500
To: netsig@tapr.org
Message-ID: <199507202211.RAA28667@ns1.texoma.com>
Rendered body type: text/plain

>I think that the suggestion by some folks that there be different sigs to
>cover the different areas of interest might work to reduce the extremely
>hostile and often irrational comments. I suggest that netsig be divided into
>three parts. NET-RF-SIG for those who believe that only rf should ever be
>used in amateur radio networking, NET-WIRE-SIG for those who believe that
>only wireline systems should be used in connecting local amateur radio
>networks, and NETSIG for those of us who support the use of all kinds of
>technology to network depending on individual interest and preference. The
>NETSIG commenters would hopefully never try to reduce others enjoyment of
>technology and the advancement of same.
>
>Rick, KV9U
>

I've got a better idea.. It might be easier if the HAM RADIO aspect of
networking be discussed on the NETSIG, and the wireline advocates look for
SIGs which are hosted by the commercial carriers who will profit by the
extra bucks and spectrum the "wireline" way of thinking will provide for them.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Friendly fire is always most accurate.

261. Re: [NETSIG:1653] Re: TCP/IP Disadvantages

From: Bruce Perens <bruce@Pixar.com>
Date: Thu, 20 Jul 1995 15:26:15 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sZ42q-000ADBC@mongo.pixar.com>
Rendered body type: text/plain

willi_r@mail.uwlax.edu said:
> Could you please enumerate the disadvantages of TCP/IP in rf paths?

Well, it used to be that TCP/IP had too much overhead since you had to

encapsulate it within an AX.25 packet to comply with FCC rules. That rule has since gone away, so it's not a problem any longer, at least in theory. In practice most Amateurs using TCP/IP still encapsulate it in AX.25 . This will change as existing software is modified to accept raw IP or AX.25-encapsulated IP from the same TNC. Currently it's an either-or proposition.

Another problem with IP is that it was designed for a fully-connected network, not one in which connections are made and broken by ionospheric weather, interference, etc. However, I think this isn't an insurmountable problem - the problem is mostly in the existing routing software implementations, which can be fixed without requiring any changes in the TCP/IP protocol definitions.

Probably the biggest problem for most people is that TCP/IP doesn't live in the ROM of your TNC, but is generally implemented as software in the computer connected to your TNC. This means that it takes a bit more hardware to set up a router on a remote hilltop than it would using NetROM or digipeated AX.25 . An IP router could be done in ROM, though. The problem is simplified by the fact
that the router need not know about TCP to route packets - only IP is necessary.

Bruce

--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

262. Re: [NETSIG:1651] Re: Networks real and imagined -Reply

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 20 Jul 95 14:58:33 PDT
To: netsig@tapr.org
Message-ID: <9507201458.ZM15429@hanko>
Rendered body type: text/plain

On Jul 20, 4:00pm, Gwyn Reedy, W1BEL wrote:
> Subject: [NETSIG:1651] Re: Networks real and imagined -Reply
> Hank - good message listing items for discussion.
>
> In response to point 6 regarding how to get manufacturers to create better
> lower cost products faster (to support networking):
>
> My answer is reducing the manufacturers' risk by adopting standards and
> implementation plans. I mean getting folks to agree to and really mean
> to follow them, not devolve into opinion groups like this SIG. That will
> not be easy to do. Organizations fail to commit, and individuals argue.
> The standards will not be optimum (to gain consensus) and therefore
> will be bad-mouthed by the tech types.
>
> Two examples:
> AX.25 as supported in code by Tapr (last decade). I spend our software
> efforts on user bells and whistles because the protocol is worked out
> and secure. It may not be wonderful, but supporting it doesn't consume
> resources.

A key person at one of your competitors said almost exactly the same thing to me last week. This point should be obvious to anyone who has been in business, but perhaps not so obvious to one who has not had to meet payroll and pay suppliers.

What might we do to bring the three main upper level protocols in use (NET/ROM, tcp/ip, ROSE) into this same arena?

How about an API, call it for example KISS++, for communication between the application and the modem? Berkeley sockets comes to mind as an existing interface specification that might serve, as does the winsock version 2 spec. Any other software authors care to comment on this? I've written my applications to all speak to a common api, based rather loosely on the BPQHOST interface. It was a real mess to do the CLOVER interface this way, and I'm now in the process of rewriting this interface layer to better handle protocols like CLOVER and the TORs. If the interface to all the devices I want to support were a single well specified standard, I'd write a lot more application code and a lot less glue code.

The existence of, and huge efforts from, the TAPR folks were what made this all happen in the first place. What organization might take on the next step? Personally, I have asked the ARRL, via several of it's representatives, if they would be willing to take point on this and devote

resources to make it happen. The answer was basically "No.", although it was
usually phrased a bit differently.

> Perhaps the K9NG/G3RUH modem is another example. All the manufacturers
> have converged on this defacto modulation standard.
>
> A small company can only spend so much on research and can take only so
> many risks or it is out of business. (Aside or sermon: So few Americans
> have any understanding of the economics of business, and they are not
> helped by the mass media and politicians. Some recent comment on the
> AMSAT BB-SIG about manufacturers lining their pockets really made me
> squirm - it just doesn't work that way, and besides if I was able to
> make enough to retire handsomely it would be well earned with a decade
> of 80 hour weeks and risk of all personal resources. end sermon - sorry)

Amen! I squirm every time some ignorant ham says things like this ...

> So how do we decide what to spend our research on and bring to the
> amateur market? If it has some appeal to the commercial marketplace,
> then the risk is reduced since if the hams ignore it, there is still
> another market. If it is backward compatible with previous standards
> then the risk is reduced. Or if there has been a lot of talk and
> discussion about it, then there is a better chance it will be accepted.

A rough quote from the president of another of your competitors:
"If it were not for the commercial market for this device, we would
not have developed it at all, much less be able to produce it for
a price hams can afford. If the commercial application did not exist,
we would never have even started research on the protocol."

There is a difficult business problem here. Every time I talk to Karl
Medcalf (wk5m) I ask him what could be done to convince him that 56k
modems for the Data Engine and "KPC-9656"s would be REAL nice to have.
His response is always pretty much the same: show there is a market at
a price where Kantronics can make a profit as good or better than it
makes with the KPC-3 and KPC-9612, and we WILL have them.

For the "business challanged": yes, that "profit" word. It is those
profits, or hopes of them, that cause businesses to be created, and
it is continued profits that cause businesses to succeed.

Is there something this group can do to help move the hobby forward
via the mechanism of moving the industry that supplies "toys" to the
hobby forward? I think the answer is a qualified yes. We can bring
new hams into networking, and thus increase the size of the market
for "networking oriented toys". We can create new applications that
attract these folks, and we can create networks that support those
applications.

<deletia>

> Begin self-serving advertisement portion:
> PacComm has made available a low cost 56kb capable TNC. On the market for
> over a year now. We have picked up manufacturing and marketing the Gracilis
> products which are a step above typical TNC products in horsepower. They
> make a great network switch. Now we are going to be manufacturing and
> marketing the WA4DSy 56kb MSK modem (second design). If that isn't
> helping to do networking, I don't know what to do. What is missing is
> the radio. We're looking at some designs, but can't say if we'll be able
> to market a product or not.

Question: what if you could partner with some company that built the
radios. There might be three products here; the modem alone, the
radio alone, and a complete solution which was a bundle of both.

I know about the business difficulties involved (whew! joint
development, joint marketing, support (tough tough tough). Been there, done
that, got scars to prove it.) but might there be a potential synergy if the
resultant product was a "complete solution" with radio/modem/networking
software/standard application api?

> In the HF arena, we pionered PacTOR in the US, and now offer PacTOR-II.
> It is high-tech and expensive, but it is a tool you can call up and
> take delivery of. (I would be marketing Clover but Bill Henry has
> resisted dozens of requests to license the design over the past 4 years.)

Keep at him! Without the second source, CLOVER will probably not grow
nearly as fast as it's capability would predict. Perhaps a win for both
companies were there to be two products with different target markets.

> End self-serving advertisement portion.
>
> Summary: If people agree on what they want/need that forms a market. If I
> am confident there is a market, I'll produce a product for it.

Ok folks ... this should tell us what we need to do. Were we to get a
similar message from HAL and Kantronics I'm certain it would say the
same things. Cannot speak for the other manufacturers because I don't
personally talk with them all that often ...

> Best regards to all,
> and thanks for the bandwidth.

We're not short on bandwidth yet ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

263. Re: [NETSIG:1658] Re: TCP/IP Disadvantages

From: Bruce Perens <bruce@Pixar.com>
Date: Thu, 20 Jul 1995 15:29:33 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sZ462-0008ksC@mongo.pixar.com>
Rendered body type: text/plain

hank_oredson@MENTORG.COM said:
> 1. No viable adaptive routing capability.
This is no longer true. There's an RSPF implementation for Linux that does
RSPF the way its author intended (which NOS never has).

> 2. Application complexity. [...] To date, the
> only widely used tcp/ip applications have been baroque, obscure,
> poorly documented, and essentialy unusable by "J. Random Ham".

I'm working on that.

--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

264. Re: [NETSIG:1651] Re: Networks real and imagined -Reply

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Thu, 20 Jul 1995 20:28:13 -0300
To: netsig@tapr.org
Message-ID: <199507202328.UAA09844@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>End self-serving advertisement portion.
>
>Summary: If people agree on what they want/need that forms a market. If I
>am confident there is a market, I'll produce a product for it.
>
>Best regards to all,
>and thanks for the bandwidth.
>
>Gwyn

Thanks for the notes Gwyn, I for one appreciate such info from manufacturers
as well as Amateur developers.

I would consider your posting more "Amateur-serving" than "self-serving"
and happy to see it anytime.

In particular your comments about user-directed products means that this
forum has a great opportunity (if used wisely) to positively influence the
development of Amateur Packet Radio products.

73 - Ron VE1AIC

265. Re: [NETSIG:1630] Meteor Scatter Modulation

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Thu, 20 Jul 1995 16:49:41 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507202359.SAA18485@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Glad to see some interest in meteor-scatter expressed here on the group. Most of the amateur experiments using this mode were on 144 MHz. The results were not encouraging, except perhaps during shower activity. Again, we need to make a distinction between the highly publicized meteor showers versus the background meteor scatter activity.

Meteor showers are characterized by brief periods of intense ionized trails which are created periodically due to relatively large accumulations of debrie from crunched astoroids, comets, etc., colliding with the earths orbit.

Meteor scatter is associated with the ionization created by a daily on-slaught of tons of smaller particles, mostly space "dust" entering the atmosphere. Although fairly consistant, ionization levels from these particles are lower than those from the periodic showers. The useful frequency range for this mode extends from about 20 - 110 MHz, with a peak at around 40 MHz.

The burst duration e.g., the time during which the particle ionizes typically varies from a few hundredths of a second to 2-3 seconds. This is the period for which you want to tailor baud rate so's to attempt to get at least one packet, including acks, completed during that time. This also explains why full-duplex is desirable since simplex TXDs at both terminals eat up more of the burst time.

Simplex WILL work, just causes an approximate 50% throughput penalty. For initial experiments without tying up too much resources, simplex is a practical approach to get a feel for how well this mode will work. Since some experimentation with modem speeds and receiver-transmitter bandwidths may be involved, a low cost approach would be to look into converting older SSB CBs to 50 MHz for receiver and exciter use. Since we are entering the minimum of the solar cycle, used 10M SSB gear may be found cheaply as well.

Regulations allowing, 10M is also a candidate band for meteor-scatter. Compared to 6M, there is a few dB circuit penalty but the chances are more digitaly inclined hams will already have the 10M RF gear in-hand. There's also the possibility that a 10M-6M full duplex link would be more effective than just simplex on 6M.

Antenna requirements for m-s links are not exoctic. In general, due to the entry path of the space dust, antennas with 30 degree patterns work well. This means 3-5 element yagi beams are suitable. There is also a 3-4 dB advantage to horizontal, over vertical polorization.

As Gwyn points out below, a good starting point is with 1200 baud PSK modems. The most recent (1990) paper I read on this topic mentions 4800 baud PSK modems being used, but for starters, 1200 baud PSK would be simple for us to use. I2KFX describes and provides schematics for changes to a Japanese 1200 baud PSK modem in his files. Incidently I downloaded his files from ftp.funet.fi and have placed them on hereford.ampr.org in the /pub/hamradio/incoming directory. There are 3 of them, ms_*.zip. If anyone is interested at all in this topic, they are worthwhile reading for background as well as getting the path design utilities he includes.

Another advantage of 6M m-s is frequency re-utilization Due to the antenna pointing angles, there is normally no interference outside of an approximate 30-50 mile radius of the terminal stations. This means with proper site planning, the same frequencies can be re-used throughout the continent/world. Of course there could be periods where Sporadic-E may be a problem, but no mention of this is made in the commercial literature I've reviewed.

73 de Jack

At 05:30 AM 7/20/95 -0500, Gwyn Reedy, W1BEL wrote:
>One easy-to-try method is PSK using modems designed for communicating with
>the Microsats. Non-US hams and commercial users have reported good results
>with the units on HF SSB at 1200 baud.
>
>That is still 1200, and still AX.25 protocol, but it makes an easy to
>get started method for determining performance.

```
>
>I tried some packet meteor scatter back in 83 or 84 during the perseids (sp)
>shower. A gent in South Florida and I took turns trying to send to and
>receive from two guys in St. Louis. We used TNC-1 1200 baud AFSK - that
>was all there was then. I was running a 2m brick - what is that- about
>150 watts, the Ft. lauderdale guy had 500. Don't remember what the St.  Louis
>guys had.
>
>What we did was just depress the Enter key on the terminal so that frames
>with only the sending station callsign and no data were transmitted. When
>you see one it looks like W1BEL>CQ: on the screen, and if you have the
>monitor time stamp on, the date and time are appended locally.
>
>Results were that I copied ONE frame from St. Louis, and the Ft. Lauderdale
>guy with a better antenna copied about 12. Again, don't remember what the
>St. Louis results were.
>
>Not a very good setup (2 meters vs 6, AFSK, etc.) but it did work a bit.
>Subsequent to that I bought a 6m Kilowatt amp, two 6 element 6 meter beams
>and was really excited about some serious ms work, but then we started
>the PacComm business and I haven't done any hobby work since.
>
>I hope you guys try some tests.
>
>73,
>Gwyn
>_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
>Gwyn Reedy, W1BEL      gwyn@paccomm.com        W1BEL@amsat.org
>
>+(813) 874-2980        Fax:+(813) 872-8696     BBS: +(813) 874-3078 (V.34)
>
>PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618
>
```

266. Re: [NETSIG:1610] Re: Bulletins vs Mail

```
From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. - AG0N)
Date: Thu, 20 Jul 1995 23:46:19 +0000
To: netsig@tapr.org
Message-ID: <9507202346.AA11566@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain
```

```
>Maybe it is time to rethink WP in light of the ideas raised in the
>ROSE et al network discussions.  Can anyone point me to some specifics
>on the ROSE protocol?  Didn't see any answer to my question about the
>availability of ROSE that runs on a PC, is there such a thing?
>
>   ...  Hank


I've always been curious about this too.  Tom, is there something in
ROSE-like that will run like BPQ in the computer and allow applications like
FBB to interface with it?

Gary
..
Gary McDuffie, Sr.
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM
```

267. Re: [NETSIG:1631] X1J Suggestion

```
From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. - AG0N)
Date: Thu, 20 Jul 1995 23:46:21 +0000
To: netsig@tapr.org
Message-ID: <9507202346.tf@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain
```

```
>Would it be possible or reasonable to either remove, or make optional,
>the function in a NetRom node where a connection to a call sign is
>looked up in the nodes table and the path taken to the node if one is
>found.  There are times when it would be useful to attempt a direct
>RF connection to the call sign instead of following the node routing.
>
>An example is where we have two sets of node pairs.  Under normal
>conditions traffic from SWT to GTF goes SWT-(#SWT)-(#GTF)-GTF on
>UHF.  Last winter the #SWT transmitter drifted off when it was
>a bit cool (-20F) and the UHF path was useless until it warmed up.
>
>If a user could connect from SWT to N7AGP (the GTF call) and have
>it use the direct route instead of the UHF path, it wouldn't
```

>be necessary for a node-op to be making routing changes to keep the
>traffic flowing.
>
>Another time when this capability would be useful is for testing paths
>before a Node broadcast is heard or in spite of hard-coded routings.

Bill:

This, if I understand the question correctly, is already in the code. Just
use the alias of the node you want to connect to WITH A SSID ATTACHED. For
instance, to go direct from SWT to GTF, you would type C GTF-0. Any ssid
can be used (0-15). That bypasses any routing tables and makes a level 2
connect. Yes, you must have validate turned OFF or it will not work.

BTW, give N0JMK (my boy) a call sometime. He's in GF now.

Gary - AG0N
..
Gary McDuffie, Sr.
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM

268. Re: [NETSIG:1664] Re: TCP/IP Disadvantages

From: koster@mdd.comm.mot.com (Ken Koster)
Date: Thu, 20 Jul 95 17:13:13 PDT
To: netsig@tapr.org
Message-ID: <9507210013.AA08884@fh34c.mdd.comm.mot.com>
Rendered body type: text/plain

Bruce Perens <bruce@Pixar.com> Says >
> hank_oredson@MENTORG.COM said:
> > 1. No viable adaptive routing capability.
> This is no longer true. There's an RSPF implementation for Linux that does
> RSPF the way its author intended (which NOS never has).
>
And contrary to what was said earlier, RIP (the NOS version) works fine
in a "properly" designed network. However RSPF (done properly) will
be better.

> > 2. Application complexity. [...] To date, the
> > only widely used tcp/ip applications have been baroque, obscure,
> > poorly documented, and essentialy unusable by "J. Random Ham".

I have to take exception to this, In the Puget Sound area We have hams
from every walk of life, of every possible skill level, using NOS and
interacting with NOS and Linux machines just fine thank you. All on
a network that doesn't use anything else for linking other than
ax25 UI frames. The TCP/IP users love it and the ax25 users love the
access to a network of something more than just store and forward bbs
systems. The Internet gateway is just one of the things that keeps the
interest level high and allows us to continue to provide more and
better RF access.

"J. Random Ham" != J. Stupid Ham

Certainly the widely used tcp/ip systems are not well documented but they
are adequately documented for anyone with the desire to learn something new.
With a little help from someone who has been there before, anyone can have
it up and running in short order. Such help is available everywhere.
And the documentation keeps improving.

Ken, N7IPB

269. Re: [NETSIG:1643] Re: Wire vs RF.

From: "Brian A. Lantz" <brian@lantz.com>
Date: Thu, 20 Jul 1995 22:49:58 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507202211.P10533-0100000@lantz.com>
Rendered body type: text/plain

On Thu, 20 Jul 1995, Charles Brabham wrote:

> Chuck's message was 9k.. A recent posting by Brian Lantz was 8k.

I have NOT posted a single message to this SIG (before this one). Why am
I a topic of discussion here?

```
Brian A. Lantz     http://www.lantz.com     brian@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

270. Re: Re: microwave

From: wb8wka@wb8wka.ampr.org (Jeff King)
Date: Thu, 20 Jul 95 23:18:03 EST
To: netsig@tapr.org
Cc: pipe2@oeonline.com
Message-ID: <3578@wb8wka.ampr.org>
Rendered body type: text/plain

```
>From: pipe2@oeonline.com
>To: netsig@tapr.org
>Subject: [NETSIG:1647] Re: Re: microwave
>
>I have thought about using gunnplexers in outdoor locations (i.e. not
>temperature stable), and have thought that Peltier junctions would be ideal
>for controlling the temperature of the gunnplexer. A peltier junction acts
>as a solid-state heat pump, that is it moves heat from one side to the other
>*activly* when powered. The direction of the heat transfer is controlled by
>the polarity of the DC drive current. By building a Peltier junction into
>the case of the gunnplexer (PVC pipe, Al, whatever), and building a
>temperature sensor inside the case, you could activly control the
>temperature inside the case. The Peltier junction could move heat into the
>case when it was to cold and it could move heat out of the case if it became
>to hot. Wrapping the case in 1/8" foil-backed insulation would help to
>maintain the temperature within the case (important since Peltier junctions
>draw *alot* of current - about 3-5 amps for one square inch).
>
>        -Bill kb8wyp

Similar thought as to what I had. However, I was just going to run
the gunplexer at a higher temperture then ambient by heating it
with a resistor. I'd bond the case of the gunplexer to a heatsink
with a fan attached to it. By controlling the fan and current
through the resistor I'd have a good grip on temperture control,
at least over a delta of 10-15C at least.

Another problem I ran into with gunplexers was air currents
blowing on the gunn diode. This would give large deltas over a
very short time period (very bad). The gunn diode is quite
inefficent so it runs hot. I solved this problem by placing
plastic wrap over the front of the horn.

-Jeff


SMTP     - wb8wka@wb8wka.ampr.org [44.102.16.16] |  Operating
Internet - wb8wka@merit.edu , jking@merit.edu    |       on the edge
AX25     - wb8wka@wu8c.#SEMI.MI.USA.NOAM         |              of Chaos
```

271. Re: [NETSIG:1662] Re: TCP/IP Disadvantages

From: "Bob Nielsen" <nielsen@primenet.com>
Date: Thu, 20 Jul 1995 21:32:32 +0700
To: netsig@tapr.org
Message-ID: <199507210432.VAA18283@mailhost.primenet.com>
Rendered body type: text/plain

```
> Probably the biggest problem for most people is that TCP/IP doesn't live in the
> ROM of your TNC, but is generally implemented as software in the computer
> connected to your TNC. This means that it takes a bit more hardware to set up
> a router on a remote hilltop than it would using NetROM or digipeated AX.25 .
> An IP router could be done in ROM, though. The problem is simplified by the
> fact
> that the router need not know about TCP to route packets - only IP is
> necessary.

X1J already does this..

--------
Bob Nielsen                    Internet:nielsen@primenet.com
Tucson, AZ                     AMPRnet: w6swe@w6swe.ampr.org
```

272. Re: [NETSIG:1658] Re: TCP/IP Disadvantages

From: k5jb@k5jb.org (Joe Buswell, K5JB)
Date: Thu, 20 Jul 95 22:35:00 CDT
To: netsig@tapr.org
Message-ID: <4501@k5jb.org>
Rendered body type: text/plain

With all due respect, I want to temporarily come out of the lurk mode
and toss a little profound knowledge on the heap.

TCP/IP over amateur radio is taking some bad hits here. In all this
apparently uninformed bickering I have seen very little factual information
about TCP/IP on the radio. The only problems I have seen with TCP/IP on
the radio have been from misapplication, and lack of understanding how
much data a circuit is capable of handling. I have had no trouble at all
sending mail daily from Oklahoma City area to Dallas with SMTP. That is
a fairly long, and not particularly reliable, circuit. Because of the
layered nature of TCP/IP, SMTP is much more predictable and reliable than
BBS forwarding protocol over that same circuit, and it puts LESS data on
the circuit in the process of moving a given amount of mail. All it takes
to get excellent performance from TCP/IP is an understanding of how to
set the thing up properly within the network environment it is working.

Anyone who says that there hasn't been any advancement in TCP/IP over amateur
radio recently is simply not in possession of the facts.

Don't misunderstand me. I run a BBS too, and use BBS forwarding where it
is best, and use SMTP where it is best. I use Net/ROM where it is best. I
use ROSE where it is best. I use Texnet where it is best. I even do a
little (stripped down) forwarding to TNC mailboxes from NOS -- just because
I can do it. I use every tool available to me to enjoy amateur radio to
its fullest.

Another bit of misinformation refers to TCP/IP solely as an end to end
protocol vis BBS store and forward. TCP/IP can be made to do store and
forward also with the "in care of" mailing hack, and when necessary this
technique works very well. It is very tricky to set this up to work
automatically over unpredictable, long, RF circuits, so I show people
how to repost mail manually when the need arises. Some of the mail I send
to Dallas is forwarded by SMTP from the Dallas station to other TCP/IP
stations in Texas. The combination of SMTP and store and forward, is
simply the most effective way to send this mail.

Hank said recently:

>1. No viable adaptive routing capability.
> Nodes come and go. Keeping one's routing tables up to date
> by hand is a major pain. With NET/ROM it is all automatic.

So what? This is a wash. Net/ROM network management is not automatic.
With all the pop-up ego nodes around, and nightly band openings, Net/ROM
must be managed if it is to be effective. I manage the Net/ROM network
for the BBS forwarding around the state and it handles an enormous amount
of traffic very well. It wouldn't work worth a hoot if it wasn't managed.

>2. Application complexity. This is not, per se, a function of the
> protocol, but is a function of the application. To date, the
> only widely used tcp/ip applications have been baroque, obscure,
> poorly documented, and essentialy unusable by "J. Random Ham".

These applications (NET and NOS) are only difficult if J. Random Ham has
reading and comprehension deficiency. I have spent thousands of hours
documenting NET, and hundreds of hours documenting NOS so one with an
eighth grade reading ability can run them successfully. Latest JNOS only
takes a dozen commands to become fully functional. That shouldn't take
a rocket scientist to use. KaGold it is not, but it the documentation
I have is enormously clearer and more complete than, for example, the
documentation for G8BPQ switching. I have helped BBS operators set up
BPQ switches for the W0RLI BBS application, and I can tell you that the
only way to figure BPQ out is by experimentation.

Maybe I am wrong about the clarity and completeness of TCP/IP documentation
because I am so familiar with it, but I haven't seen anyone who is willing
and able to read and follow the instructions have any trouble getting JNOS
(or NET) up and running fine.

>3. To date the ip implementations have been required to run on top

> of AX.25 (FCC requirement). Now that that requirement has been
> relaxed, perhaps we will see some "pure ip" implementations.

This is no big deal. The AX.25 overhead is piddly for the enormous advantage it gives us in timing tools that keep the traffic moving in a typically congestive environment. Where RF paths are good, I use datagram; where we are going to have difficulty I use VC so we can retry every 8 or 10 seconds What are we talking about here? Sixteen bytes of overhead? This is insignificant when compared to the 40 bytes of IP and TCP stuff, which is necessary to give TCP/IP its robustness. If Net/ROM must be used, there is another 20 bytes of overhead so we try to avoid using that transport mechanism.

If NETSIG is to continue as a useful forum its complexion must change. We should be trying to inform others about networking technology we have available, and sharing the special knowledge we have accumulated. It is boring and useless to keep up the "my way is better" crap. I would recommend anyone who is interested in networking take opinions you see here (including mine) with a grain of salt. In particular, when you see messages that go on and on about what is wrong with the "other guy's" protocol, blow them away.

I didn't intend for this to be this long, and for that I apologize to the group, but I lack the time to make it shorter. I have a radio calling me to play with it.

73, Joe

Joe Buswell, K5JB, Midwest City OK
Amateur radio BBS or TCP/IP: k5jb@k5jb
Internet: k5jb@k5jb.org (or k5jb@qns.com)

273. Re: [NETSIG:1649] Re: Wire vs RF.

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Fri, 21 Jul 1995 07:37:10 +0200
To: netsig@tapr.org
Message-ID: <199507210536.HAA09304@unix10.pressimage.fr>
Rendered body type: text/plain

My opinion is that wire is OK when it's BETTER: Faster, more reliable, cheaper, easier...
Sysops and users make their CHOICE.
Ideological opinions shouldn't have their place here, IMHO.

Now if we could STOP this BORING thread, that would save my "del" key...

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
> F1JKJ@planete.net < Public Key on mail servers
Fidonet 2:323/27.1
Compuserve ID 100407,436

274. INFORMATION NETSIG (fwd)

From: Steve Stroh <strohs@halcyon.com>
Date: Thu, 20 Jul 1995 22:46:21 -0700 (PDT)
To: TAPR Networking SIG ML <netsig@tapr.org>
Message-ID: <Pine.ULT.3.91.950720222150.18676G-100000@chinook.halcyon.com>
Rendered body type: text/plain

NETSIG participants:

Following is THE charter statement for the TAPR NETSIG mailing list, as returned from tapr.org on Thursday 7/20/95, 22:00 or so PDT. (Send mail to listproc@tapr.org, put information netsig in the body of the message.)

Note SPECIFICALLY that IT DOES NOT say that the only acceptable medium of networking appropriate for discussion on this mailing list is Radio.

Despite efforts by two participants to raise the noise level of this mailing list above the tolerance point of many in regards to the use of non-radio links in Amateur Radio networking, and to redefine the charter of this mailing list to exclude discussions of same, the discussion of non-radio links, since it is not discouraged by the charter...

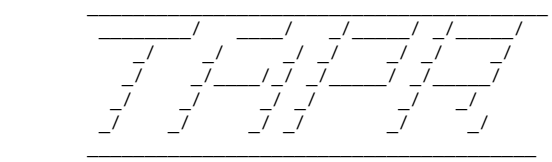
_IS_ PERMITTED!

--
Steve Stroh N8GNJ strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

... reluctantantly exercising "authority" on this ML as requested by

the moderator, AG9V.

---------- Forwarded message ----------
Date: Fri, 21 Jul 1995 00:17:48 -0500
From: listproc@tapr.org
To: strohs@halcyon.com
Subject: INFORMATION NETSIG



TAPR Regional Networking Special Interest Group Mailing List!

NETSIG is working on
---
1. Establish a collection of networking case studies for the benefit of those implementing networks.

2. Establish a database of people interested in networking.

3. Get discussion going on how we're going to interconnect regional networks, and provide input to the ARRL 219 Committee.

4. Discuss the role of packet <--> internet gateways in the network scheme.

5. Other Networking Topics as they arrive.

<non-charter information snipped>

--
end of forwarded message

275. Re: [NETSIG:1662] Re: TCP/IP Disadvantages

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Thu, 20 Jul 1995 23:11:48 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507210621.BAA25517@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

At 05:43 PM 7/20/95 -0500, Bruce Perens wrote:
>
>willi_r@mail.uwlax.edu said:
>> Could you please enumerate the disadvantages of TCP/IP in rf paths?
>
>Well, it used to be that TCP/IP had too much overhead since you had to
>encapsulate it within an AX.25 packet to comply with FCC rules. That rule has
>since gone away, so it's not a problem any longer, at least in theory. In
>practice most Amateurs using TCP/IP still encapsulate it in AX.25 . This will
>change as existing software is modified to accept raw IP or AX.25-encapsulated
>IP from the same TNC. Currently it's an either-or proposition.
>
>Another problem with IP is that it was designed for a fully-connected network,
>not one in which connections are made and broken by ionospheric weather,
>interference, etc. However, I think this isn't an insurmountable problem - the
>problem is mostly in the existing routing software implementations, which can
>be fixed without requiring any changes in the TCP/IP protocol definitions.
>
>Probably the biggest problem for most people is that TCP/IP doesn't live in the
>ROM of your TNC, but is generally implemented as software in the computer
>connected to your TNC. This means that it takes a bit more hardware to set up
>a router on a remote hilltop than it would using NetROM or digipeated AX.25 .
>An IP router could be done in ROM, though. The problem is simplified by the
>fact
>that the router need not know about TCP to route packets - only IP is
>necessary.
>
>   Bruce
>
>--
>-- Attention Ham Radio Operators: For information on "Linux for Hams", read
>-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send

>-- an e-mail message containing the word "help" to info@hams.com .
>

I'd like to add my observations about tcpip and RF. As I see it, the real key to having good data communications lies with having a suitable circuit.

I once operated attended thenet node gateways between our local VHF networks to 30 and 17 meters. The purpose then was to accomplish what's being discussed today; extend local connectivity. AG0N participated in experimenting with this resource. Gary pointed out that as the network overhead increased, circuit reliability decreased. The overhead we are talking about is the 20 aditional bytes netrom requires over that of ax.25. We quickly noticed the KANodes on-channel using ax.25 for node and gateway functions were MUCH more solid than was netrom.

At first I was puzzled by this, thinking the fault lay with an improperly set netrom parameter. Most of the KANodes did run with paclens typically set for 40 to 60 whereas there wasn't a way to reduce the netrom paclen below 256 bytes. Had we been able to do that, I'm sure the netrom node/packet gateway operation would have been much more successful under marginal HF circuit conditions. I'm also sure that reducing the overhead would have helped as well.

Bye and bye, a couple of tcpip stations came up on one of "our" HF channels. These guys were disasterville! Retries and QRM beyond belief. I don't know that they ever were successful in getting a file completely transferred between them.   Now that I have some experience with XNOS under my belt, I can see that most of their problem probably stemed from not knowing how to set paclen for HF operation. Additionally, because of slightly higher overhead than netrom, the paclen to information ratio would be at a disadvantage.

Shifting the tcp/ip scenerio to operation over a typical VHF netrom node system, the problem of overhead really shows up. The tcp/ip overhead added to the netrom overhead amounts to some 50 bytes or so for each UI frame. Mix in a little circuit congestion and Mr. netrom starts to panic!

Rather than grumble about using tcp/ip over RF, there is methodology to compensate for tcp/ip's overhead. As Tom, W2VY suggests, running tcp/ip on top of a ROSE network helps to reduce the overhead burden due to ROSE's lower overhead.

For those operating in a netrom system, very little credit seems to have been given to Dave, G8KBB's IP router in the X1J node. For my way of thinking, this was an exciting breakthrough. What it means is the tcp/ip overhead is NOT added to the netrom overhead when the ip router is enabled! This results in a significant network throughput improvement for not only tcpers but other network users as well! Dave's writeup in his docs really plays down the significance of this feature and perhaps is the reason one often sees the IP router disabled on X1J systems here in the southwest.

I haven't experimented with this yet, but along with the IP router and solid RF links, comes the possibility of doubling the standard netrom 256 byte paclen when running tcp. The significance here is that twice as much data is being passed, but without an increase in overhead! This too is good and if implimented, could put tcpip on a competitive overhead footing with netrom.

I don't know how ROSE sysops handle the determination of network health, but here, the practice is to connect to the entry node and do a NODES command. This usually results in a screenful of node aliases and callsigns being generated. A seasoned NodeOp can from scanning the list tell what's happening out on the network. If one has an XNOS terminal on-frequency, they can do the same thing, but without creating QRM on the channel since a NODES command can be issued directly from the keyboard.. In addition, the monitor display for XNOS is also handy for checking system health since it displays path quality values during neighbor NODES broadcasts.

Now enter the X1J TNC-2 based nodeware with a few ip compatible features. One feature I see great potential in is the ability to PING the node from an XNOS terminal. For those not familar with the PING function, the response indicates the round-trip time between terminal and the node. This is useful system health information as it can indicate the absence or presence of a node and relative circuit congestion at that particular time.

Someday I envision the ability for XNOS to have an automatic script which periodically will PING designated network nodes.   XNOS would compile a daily listing showing system status as well as an immediate alert message if it determines a node isn't responding. This is a feature most network administrators I know, would appreciate!

In summary, to answer the original posters query about the disadvantages of tcpip in amateur RF, yes there definately has been problems. I was one of the very first to be critical (and vocal) when observing the damage inflicted upon our local netrom systems by tcpip in the early days. However I now see a good relationship building with tcpip as we become more educated in how to intelligently use this protocol courteously and to OUR advantage over RF networks.

73 de Jack

276. Re: [NETSIG:1666] Re: Meteor Scatter Modulation

From: mark@tetherless.com (Mark Oppenheim)
Date: Thu, 20 Jul 1995 23:33:07 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507210633.XAA08351@gorgor.pa.tetherless.com>
Rendered body type: text/plain

At 07:11 PM 7/20/95 -0500, Jack Taylor wrote:

Some stuff omitted...

>Meteor scatter is associated with the ionization created by a daily
>on-slaught of tons of smaller particles, mostly space "dust" entering the
>atmosphere. Although fairly consistant, ionization levels from these
>particles are lower than those from the periodic showers. The useful
>frequency range for this mode extends from about 20 - 110 MHz, with a peak
>at around 40 MHz.

Yes, I think that this points to 6M (and lower) as the medium-of-choice.

>The burst duration e.g., the time during which the particle ionizes
>typically varies from a few hundredths of a second to 2-3 seconds. This is
>the period for which you want to tailor baud rate so's to attempt to get at
>least one packet, including acks, completed during that time. This also
>explains why full-duplex is desirable since simplex TXDs at both terminals
>eat up more of the burst time.

This would be an interesting application involving some split-site systems. I can see a RX and TX site being linked by some of the now-available commercial license-free spread-spectrum modems on 902-928 MHz (when they are legal on ham bands - now they are not due to the spreading code involved, but this is to change soon dur to efforts by WA8DZP and others) or 56KB DSY stuff on 430 MHz. (or the seriously inclined, and radio challenged, would just put a pair of phone modems between sites...)

>Simplex WILL work, just causes an approximate 50% throughput penalty. For
>initial experiments without tying up too much resources, simplex is a
>practical approach to get a feel for how well this mode will work. Since
>some experimentation with modem speeds and receiver-transmitter bandwidths
>may be involved, a low cost approach would be to look into converting older
>SSB CBs to 50 MHz for receiver and exciter use. Since we are entering the
>minimum of the solar cycle, used 10M SSB gear may be found cheaply as well.

Not sure that I agree that SSB is a medium of choice. There's not an abundance of radios out there that are low cost, and have the needed frequency accuracy for AFSK. While I agree with Gwynn that 1200 baud PSK modems do work well (I've used a number of his PSK-1's overseas on HF and was really amazed at what they do) they are affected by phase-shifts of the received signal - after all, they do operate in the phase domain - and not sure how much phase shift is on a MS trail. As an example, I found that using PSK on a band that has a lot of phase-shift; 7 MHz and lower for example - makes FSK a better choice for these bands under certain conditions.

Also, PSK modems are *NOT* for just any SSB radio. They are very sensitive to group-delay of the IF filter in the radio, and some radios "just don't work". The ICOM 735 is such a radio... GOOD radio, but awful on PSK.

>Regulations allowing, 10M is also a candidate band for meteor-scatter.
>Compared to 6M, there is a few dB circuit penalty but the chances are more
>digitaly inclined hams will already have the 10M RF gear in-hand. There's
>also the possibility that a 10M-6M full duplex link would be more effective
>than just simplex on 6M.

I think that if there's a concept paper, it would be easy to get higher baud rates (ie: 9600) approved by the FCC on 10M as a STA. The idea of crossband operation is interesting, and something that *I* have never thought of. There will be additional solar and atmospheric noise on 10M, compared to 6M, so that must be taken into account.

>Antenna requirements for m-s links are not exoctic. In general, due to the
>entry path of the space dust, antennas with 30 degree patterns work well.
>This means 3-5 element yagi beams are suitable. There is also a 3-4 dB
>advantage to horizontal, over vertical polorization.

I was thinking along the same lines. That AES order is getting closer by
the day...

Mark
KD6KQ

Mark Oppenheim   Internet: MARK@TETHERLESS.COM
Tetherless Access Limited   Voice: 415-843-6880 x18
2468 Embarcadero Way   Fax: 415-843-6890
Palo Alto, California 94303 USA

          Visit our WWW site!   http://www.tetherless.net/

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277. Re: [NETSIG:1643] Re: Wire vs RF.

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Fri, 21 Jul 95 06:15:46 UTC
To: netsig@tapr.org
Message-ID: <1485@paccomm.com>
Rendered body type: text/plain

Charles,
Please send a short response to this message (so you can have the last
word) and then give your keyboard a rest for a week or two.

I don't object to you having your own opinion, and I don't dislike you
for having some different views than I do.

I am just tired of hearing from you in response to whatever anyone else
submits to this SIG. I doubt I am alone in that feeling. Maybe if y ou
tried to limit yourself to no more than 5% of the SIG bandwidth?

Best regards,
Gwyn

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

278. Re: [NETSIG:1667] Re: Bulletins vs Mail

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 21 Jul 95 07:30:18 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c4e@ram.net>
Rendered body type: text/plain

>>Maybe it is time to rethink WP in light of the ideas raised in the
>>ROSE et al network discussions. Can anyone point me to some specifics
>>on the ROSE protocol? Didn't see any answer to my question about the
>>availability of ROSE that runs on a PC, is there such a thing?
>>
>>   ... Hank
>
>
>I've always been curious about this too. Tom, is there something in
>ROSE-like that will run like BPQ in the computer and allow applications like
>
>FBB to interface with it?
>

ROSE Protocol is ISO 8208 on top of AX.25
ISO 8208 is the Packet Layer portion of CCITT X.25

Other than the French PC stuff, there is a ROSE-PC which is an application
with no API.

If you know BPQ API then USE it to talk to ROSE.

There is no significant advantage to running ROSE on your PC to running any
other multi-session AX.25 protocol driver.

Unlike NetROM you can provide all of the required network layer information
through simple TNC commands (ie the connect command)

I have done work on a DOS driver that provides both a INT 14 interface as
well as a file interface "fopen('ROSE:W2VY@201338','rw');" but after a while
I just didn't see the point, since there were other things out there already
that had software written to use them.

I saw an earlier suggestion to have a common API for all ham network
protocols. I think that is a great idea.

What would be better is if we could adopt the NDIS standards that are
evolving for the commerical wireless networks. Then there would be commerical
applications being developed for us as well!

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

279. Re: [NETSIG:1652] RE: ACL/digipeating

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 21 Jul 95 07:37:40 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c4f@ram.net>
Rendered body type: text/plain

>With the New North American Calling plan, the area codes and the
>prefixes will include the entire number set. This is why states
>are now having to use their area code to dial in-state.
>
>What is the plan for Rose, or does this effect rose at all?
>
>de Shawn, N7XBM.
>shawnpat@sierra.net Shawn Skinner

It does not effect ROSE at all, each area should use what is defined locally.

There is a set of default NPA files I supply in the distribution and I do ask
people to update them when area codes are added and let me know.

ROSE is designed to support any numbering plan and each country has their own
and each ROSE network should follow what the commerical data networks use,
here in the USA it just happens to also follow the telephone numbering plan.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

280. Re: [NETSIG:1678] Re: Wire vs RF.

From: jra@ag9v.ampr.org
Date: Fri, 21 Jul 1995 07:48:49 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507211148.HAA19020@ag9v.ampr.org>
Rendered body type: text/plain

Guys, it's time to give this a rest. As the NetSIG moderator, I hereby declare
the "RF versus wireline" debate closed, and request that it and other dis-
cussions of a religious nature cease. Whatever relevance this thread had to
the furtherance of digital network has long since left.

I'm a strong believer in "open and honest communication" and as such I've
avoided moving NetSIG to a moderated status, despite several requests from
SIG participants to do so, but if we continue down this line, this SIG <will>
become moderated with the same basic rules as at BBSSIG.

Why is it that hams seem completely unable to carry on a discussion without
bitching at one another? This is a hobby, remember?

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

281. Re: [NETSIG:1675] INFORMATION NETSIG

From: n5pvl@texoma.com (Charles Brabham)
Date: Fri, 21 Jul 1995 09:59:28 -0500

To: netsig@tapr.org
Message-ID: <199507211459.JAA10967@ns1.texoma.com>
Rendered body type: text/plain

>>
>NETSIG participants:
>
>Following is THE charter statement for the TAPR NETSIG mailing list, as
>returned from tapr.org on Thursday 7/20/95, 22:00 or so PDT. (Send mail
>to listproc@tapr.org, put information netsig in the body of the message.)
>

Note that it includes " the role of packet <--> internet gateways in the
network scheme" as an issue the SIG is looking into.

>NETSIG is working on
>--------------------
>1. Establish a collection of networking case studies for the benefit of
>   those implementing networks.
>
>2. Establish a database of people interested in networking.
>
>3. Get discussion going on how we're going to interconnect regional
>   networks, and provide input to the ARRL 219 Committee.
>
>4. Discuss the role of packet <--> internet gateways in the network scheme.
>
>5. Other Networking Topics as they arrive.
>
>
><non-charter information snipped>
>
>

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                             Internet : n5pvl@texoma.com

The old pool shooter had won many games in his life. But now it time to hang
up the cue. When he did, all the other cues came crashing to the floor.
"Sorry", he said with a smile.

282. Re: [NETSIG:1678] Re: Wire vs RF.

From: n5pvl@texoma.com (Charles Brabham)
Date: Fri, 21 Jul 1995 09:59:30 -0500
To: netsig@tapr.org
Message-ID: <199507211459.JAA10970@ns1.texoma.com>
Rendered body type: text/plain

>Charles,
>Please send a short response to this message (so you can have the last
>word) and then give your keyboard a rest for a week or two.
>

Don't hold your breath. I have as much right to be here as the next fellow.

>I don't object to you having your own opinion, and I don't dislike you
>for having some different views than I do.
>

That's fine, Gwyn. It's nice of you to say that, and I appreciate it. This
is the attitude I try to work with as well.

>I am just tired of hearing from you in response to whatever anyone else
>submits to this SIG. I doubt I am alone in that feeling. Maybe if y ou
>tried to limit yourself to no more than 5% of the SIG bandwidth?
>

I must have missed all those postings of mine on xij nodes, flexnet, and on
meteor scatter, ect ect..
Either that, or you're exaggerating a bit here...

In any case, I'll answer guys who are confused about what I'm saying and
want clarification. I'll also answer guys who disagree with what I say and
wish to debate the issues.
In between times, I'll occasionally come up with something new to say, if I
feel I have something worthwhile to contribute to the group.

YOUR opinion of what is appropriate to discuss (such as the packet <->
internet discussion mentioned in the charter) has no bearing on what I may
discuss.

It's the NETSIG, not the GWYNSIG.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                       Internet : n5pvl@texoma.com

The old pool shooter had won many games in his life. But now it time to hang
up the cue. When he did, all the other cues came crashing to the floor.
"Sorry", he said with a smile.

283. Re: [NETSIG:1681] Re: Wire vs RF.

From: n5pvl@texoma.com (Charles Brabham)
Date: Fri, 21 Jul 1995 09:59:38 -0500
To: netsig@tapr.org
Message-ID: <199507211459.JAA10978@ns1.texoma.com>
Rendered body type: text/plain

>Guys, it's time to give this a rest. As the NetSIG moderator, I hereby declare
>the "RF versus wireline" debate closed, and request that it and other dis-
>cussions of a religious nature cease. Whatever relevance this thread had to
>the furtherance of digital network has long since left.
>
>I'm a strong believer in "open and honest communication" and as such I've
>avoided moving NetSIG to a moderated status, despite several requests from
>SIG participants to do so, but if we continue down this line, this SIG <will>
>become moderated with the same basic rules as at BBSSIG.
>
>Why is it that hams seem completely unable to carry on a discussion without
>bitching at one another? This is a hobby, remember?
>
>--
>John Ackermann   AG9V
>Internet: jra@ag9v.ampr.org
>Packet: AG9V@N8ACV.#DAY.OH.USA
>

The NETSIG charter includes the discussion of packet/internet gateways.

Am I to take it that issues surrounding packet/internet gateways will no
longer be discussed on this SIG?

At all?

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                       Internet : n5pvl@texoma.com

The old pool shooter had won many games in his life. But now it time to hang
up the cue. When he did, all the other cues came crashing to the floor.
"Sorry", he said with a smile.

284. Re: [NETSIG:1612] Re: Bulletins vs Mail

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Fri, 21 Jul 1995 12:11:08 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950721112124.754C-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Wed, 19 Jul 1995, Charles Brabham wrote:

  I said:
> >I think it's helpful for those of us who aren't knee deep in the doo doo
> >to try to see where the active proponents stand, and how far their
> >positions take them. Sometimes the positions are so extreme as to cause
> >loss of valid issues beneath the noise level.
> >
> I have provided very simple, straightforward facts on this issue. Calling
> facts you don't want to hear "noise" in no way detracts from thier factual
> nature.

[large amounts of deletia]

Charles, your entire reply is unresponsive. The noise is insolence that
detracts from your opinion. I can quickly and accurately sum up your
position in one statement: Wireline is killing ham packet.

Oh, you've managed to pull every other sentence in my post out of context,
picking nits in your inimitable style. You're nearly as good as the best

on r.r.a.p bitching about the no-coders.

And this discussion has more in common with r.r.a.p code/codeless than
anything on topic in these parts. It's something reasonable people
disagree on, it's something generating arguments unlikely to change
opinions, it's something some find enjoyable as a form of verbal
masturbation.

I'll not masturbate with you over the early reports of ham packet's death
at the hands of wireline. Interesting conjecture, yet lacking relevance
to networking technology. A policy issue that seems to be off topic
pursuant to the NETSIG charter (Barry I think has the final call on this)

Whether or not your statements are factual, further discussion adds
nothing to advancing the technology. That was the only point of my
previous message, one conveniently disregarded as you eviscerated my
response line by line.

No 73, I exhausted my civility in the last message and I'm not feeling
very regardful anymore, so I'll sign this one

In frustration,

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

285. Re: [NETSIG:1683] Re: Wire vs RF.

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 21 Jul 95 12:30:31 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c50@ram.net>
Rendered body type: text/plain

>In any case, I'll answer guys who are confused about what I'm saying and
>want clarification. I'll also answer guys who disagree with what I say and
>wish to debate the issues.

I think the term DEBATE is good.

>
>It's the NETSIG, not the GWYNSIG.

This is not a statement that fits in with a Technical Debate.

These are the kind of comments WE ALL should RESTRAIN OURSELVES FROM MAKING.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

286. Re: [NETSIG:1669] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 10:07:38 PDT
To: netsig@tapr.org
Message-ID: <9507211007.ZM17403@hanko>
Rendered body type: text/plain

On Jul 20, 7:34pm, Ken Koster wrote:
> Subject: [NETSIG:1669] Re: TCP/IP Disadvantages
>
> Bruce Perens <bruce@Pixar.com> Says >
> > hank_oredson@MENTORG.COM said:
> > > 1. No viable adaptive routing capability.
> > This is no longer true. There's an RSPF implementation for Linux that does
> > RSPF the way its author intended (which NOS never has).
> >
> And contrary to what was said earlier, RIP (the NOS version) works fine
> in a "properly" designed network. However RSPF (done properly) will
> be better.

Can you provide either the information on how to "properly design
a rip routed network" or pointers to that information? The only
local network setup this way is in Seattle. It works sort of ok
in the local Seattle metro area, but fails totally on it's boundaries.

> > > 2. Application complexity. [...] To date, the
> > > only widely used tcp/ip applications have been baroque, obscure,
> > > poorly documented, and essentialy unusable by "J. Random Ham".
>
> I have to take exception to this, In the Puget Sound area We have hams
> from every walk of life, of every possible skill level, using NOS and
> interacting with NOS and Linux machines just fine thank you. All on
> a network that doesn't use anything else for linking other than
> ax25 UI frames. The TCP/IP users love it and the ax25 users love the
> access to a network of something more than just store and forward bbs
> systems. The Internet gateway is just one of the things that keeps the
> interest level high and allows us to continue to provide more and
> better RF access.

Yes I know all about "give me free telephone time and I'll use it"
effect. Occurs with autopatches also. I have never said our network
has "only BBS systems". Any network that provides such a limited
application set is probably pretty boring. There are certainly more
and more varied applications available outside the tcp/ip suite than
within it. This is what the users of our network complain about.

>
> "J. Random Ham" != J. Stupid Ham

Your inference, I did not imply they were stupid, only ignorant.

> Certainly the widely used tcp/ip systems are not well documented but they
> are adequately documented for anyone with the desire to learn something new.
> With a little help from someone who has been there before, anyone can have
> it up and running in short order. Such help is available everywhere.
> And the documentation keeps improving.

I do not agree. The documentation is good enough for someone who
has computer and network background. For someone ignorant of these
topics, the documentation is near useless; it does not provide the
high level overview of "why you might want to do these things."
Improving the documentation to cover these things might help draw
more hams into using tcp/ip.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

287. Re: [NETSIG:1673] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 10:27:32 PDT
To: netsig@tapr.org
Message-ID: <9507211027.ZM17426@hanko>
Rendered body type: text/plain

On Jul 21, 12:22am, Joe Buswell, K5JB wrote:

> Hank said recently:
>
> >1. No viable adaptive routing capability.
> >   Nodes come and go. Keeping one's routing tables up to date
> >   by hand is a major pain. With NET/ROM it is all automatic.
>
> So what? This is a wash. Net/ROM network management is not automatic.
> With all the pop-up ego nodes around, and nightly band openings, Net/ROM
> must be managed if it is to be effective. I manage the Net/ROM network
> for the BBS forwarding around the state and it handles an enormous amount
> of traffic very well. It wouldn't work worth a hoot if it wasn't managed.

Totally false. I *never* have to do any manual changes to my netrom
setup, but must repair and update my ip routings and domain tables
on a daily basis. If you have to manually make changes to your NET/ROM
network, then you are not using it's automated routing features.

Turn them back on, and they will work fine. i.e. run the network with
the default parameters suggested by S-2000, and it works fine.

Is there interest in a discussion of how to setup a NET/ROM network?

Can you define "pop up ego node"? I bet what you mean is "we over-control
the network to the point that the NET/ROM automatic routing is no
longer able to work properly, so we turned it off."

> >2. Application complexity. This is not, per se, a function of the
> >   protocol, but is a function of the application. To date, the
> >   only widely used tcp/ip applications have been baroque, obscure,
> >   poorly documented, and essentialy unusable by "J. Random Ham".
>
> These applications (NET and NOS) are only difficult if J. Random Ham has
> reading and comprehension deficiency. I have spent thousands of hours
> documenting NET, and hundreds of hours documenting NOS so one with an
> eighth grade reading ability can run them successfully. Latest JNOS only
> takes a dozen commands to become fully functional. That shouldn't take
> a rocket scientist to use. KaGold it is not, but it the documentation
> I have is enormously clearer and more complete than, for example, the
> documentation for G8BPQ switching. I have helped BBS operators set up
> BPQ switches for the W0RLI BBS application, and I can tell you that the
> only way to figure BPQ out is by experimentation.

Or perhaps just run it with the default parameters suggested by G8BPQ.
We do, it works.

Where may I obtain a copy of your NOS documentation?

I run the latest JNOS. There were HUNDREDS of lines of data that needed
to be entered into 7 or 8 different files before it would do anything
useful. This is for a small network of ip systems, and two links to
adjacent subnets. With better documentation, I might have set this up
in perhaps one day. With the documentation provided, it took several
weeks, and a fair number of long distance phone calls. At work, I do
a great deal of work with networks/data bases/complex applications.
i.e. I'm not J. Random Ham, but a computer scientist with 30 years
of experience. I found JNOS to be exceptionally difficult to configure,
compared to any network package I've installed. There was not even a
rudimentary SETUP or INSTALL program!

> Maybe I am wrong about the clarity and completeness of TCP/IP documentation
> because I am so familiar with it, but I haven't seen anyone who is willing
> and able to read and follow the instructions have any trouble getting JNOS
> (or NET) up and running fine.
>
> >3. To date the ip implementations have been required to run on top
> >   of AX.25 (FCC requirement). Now that that requirement has been
> >   relaxed, perhaps we will see some "pure ip" implementations.
>
> This is no big deal. The AX.25 overhead is piddly for the enormous advantage
> it gives us in timing tools that keep the traffic moving in a typically
> congestive environment. Where RF paths are good, I use datagram; where we
> are going to have difficulty I use VC so we can retry every 8 or 10 seconds
> What are we talking about here? Sixteen bytes of overhead? This is insig-
> nificant when compared to the 40 bytes of IP and TCP stuff, which is neces-
> sary to give TCP/IP its robustness. If Net/ROM must be used, there is
> another 20 bytes of overhead so we try to avoid using that transport
> mechanism.

Sorry, was not clear. I was not talking about the overhead.
The most serious issue is MTU. If ip is going to work "better"
than AX.25, one of the reasons will be the ability to run MTU
larger than 256. I know this is done in some ip networks, but
have seen nothing that documents how to do it.

> If NETSIG is to continue as a useful forum its complexion must change. We
> should be trying to inform others about networking technology we have avail-
> able, and sharing the special knowledge we have accumulated. It is boring
> and useless to keep up the "my way is better" crap. I would recommend anyone
> who is interested in networking take opinions you see here (including mine)
> with a grain of salt. In particular, when you see messages that go on and
> on about what is wrong with the "other guy's" protocol, blow them away.

Of course we do <grin>.
Some of us are looking for new fun things to do, and are willing to
try anything that looks like it might be interesting. That's why
I'm running a JNOS system, have httpd on the network, have been playing
with APRS, etc. etc.

It has been a long time since the first message was auto-forwarded

(W0RLI -> K1OJH in March 1984), a long time since the first of the
header wars (early 1985), a long time since the first coast-to-coast
email (September 1984). In some way, not much has happened since then
that is not an obvious extension/improvement on what was available
by mid 1985. NOS was available then, we had "flood bulletins", the
email network covered all 50 states.

I for one am looking for interesting things to do for the next ten years.

> I didn't intend for this to be this long, and for that I apologize to the
> group, but I lack the time to make it shorter. I have a radio calling me
> to play with it.

Long is good! Gives us all something to read and some ideas to think about.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

288. Re: [NETSIG:1684] Re: Wire vs RF.

From: jra@ag9v.ampr.org
Date: Fri, 21 Jul 1995 13:40:46 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507211740.NAA19785@ag9v.ampr.org>
Rendered body type: text/plain

You (Charles Brabham) write:

>The NETSIG charter includes the discussion of packet/internet gateways.
>
>Am I to take it that issues surrounding packet/internet gateways will no
>longer be discussed on this SIG?
>
>At all?
>
>
>73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>   Internet : n5pvl@texoma.com

Charles, the intent behind the charter statement is to discuss the technical
and management issues of internet gateways, not to flame endlessly about
whether wireline links (which is much broader than the gateway issue, anyway)
will be the death of amateur radio.

Please give it a rest.

John
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

289. ROSE docs

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Fri, 21 Jul 1995 13:53:02 -0400 (EDT)
To: netsig@dingus.n5lyt.datarace.com
Message-ID: <Pine.LNX.3.91.950721135112.179A-100000@n2wx.ampr.org>
Rendered body type: text/plain

Hank, I'd like some backup from Tom on this but I think the docs you seek
can be found in the DCC proceedings from I'd like to say '88 (but I'm
probably wrong on that date) under topic X.25 level 3.

Howie

--
Howard Goldstein   hg@n2wx.ampr.org
    N2WX   http://www.tapr.org/~n2wx/

290. Re: [NETSIG:1690] ROSE docs

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 21 Jul 95 15:12:38 EDT

To: netsig@tapr.org
Message-ID: <15021573.1c52@ram.net>
Rendered body type: text/plain

>Hank, I'd like some backup from Tom on this but I think the docs you seek
>can be found in the DCC proceedings from I'd like to say '88 (but I'm
>probably wrong on that date) under topic X.25 level 3.
>
>Howie
>

The paper that Howie is refering to was by Terry Fox, WB4JFI(?) and was a
proposed AX.25 stack. I think there were some differences from the X.25 spec.

I used ISO 8208 1984 when I did my implementation, not Terry's proposal.

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

291. Re: [NETSIG:1673] Re: TCP/IP Disadvantages

From: "Bob Nielsen" <nielsen@primenet.com>
Date: Fri, 21 Jul 1995 12:30:49 +0700
To: netsig@tapr.org
Message-ID: <199507211935.MAA02278@mailhost.primenet.com>
Rendered body type: text/plain

Joe Buswell, K5JB writes:

> Another bit of misinformation refers to TCP/IP solely as an end to end
> protocol vis BBS store and forward. TCP/IP can be made to do store and
> forward also with the "in care of" mailing hack, and when necessary this
> technique works very well. It is very tricky to set this up to work
> automatically over unpredictable, long, RF circuits, so I show people
> how to repost mail manually when the need arises. Some of the mail I send
> to Dallas is forwarded by SMTP from the Dallas station to other TCP/IP
> stations in Texas. The combination of SMTP and store and forward, is
> simply the most effective way to send this mail.

With the G8FSL SMTP hopper code, it is quite easy to send SMTP in a
store and forward mode, using the IP routing information.

Bob Nielsen Internet:nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@w6swe.ampr.org
AX.25: w6swe@wb7tls.az.usa.noam

292. [NETSIG:1659] Re: TCP/IP Disadvantages

From: "Tasos Zachariou, N.B.G. Telecom. dept. SV1RD" <sv1rd@athnet.ath.forthnet.gr>
Date: Fri, 21 Jul 95 11:15:23 EET
To: netsig@tapr.org
Message-ID: <202.sv1rd@athnet.ath.forthnet.gr>
Rendered body type: text/plain

> From: n5pvl@texoma.com (Charles Brabham)
> To: netsig@tapr.org
> Subject: [NETSIG:1659] Re: TCP/IP Disadvantages
>
> >I have seen it stated by some on the TAPR sigs, that TCP/IP is not a good
> >mode for amateur radio and I am perplexed by this. I went back and spent a
> >considerable amount of time reviewing past Status Registers which seem to
> >indicate to me that TAPR considers TCP/IP to be one of the best, if not the
> >best, protocol for networking. Also, recent articles in QST seem to suggest
> >that ARRL staff also view this as the protocol to look toward.
> >
> >Could you please enumerate the disadvantages of TCP/IP in rf paths?
> >
> >Rick, KV9U
>
> To my knowlege, TCP/IP works just fine for local stuff. (It does for me!)
>
> The remarks about TCP/IP's failing in an RF environment are related to
> long-haul paths. The NOS advocates state over and over again that for
> long-haul networking to be usable and effective for TCP/IP, a commercial
> carrier or Internet must be used to overcome the speed limitations over long
> paths which radios impose on us.
>
> In other words, it can't be done properly with radios. You must use the

> telephone to get the speed required for large scale networking with TCP/IP.
>
> This inability to use RF for long-haul networks using TCP/IP is what you
> heard about.
>

That's true, but also for Netrom, Rose and any Networking
protocol (OSI layer 3)

AX.25 is not Networking is Data linking (OSI layer 2)

NETSIG I think refers to Networking rather than linking.

```
                                                     ! ________
  Tasos Zachariou                                   /_\ _______\
  Packet Mail - SV1RD @ SV1UY.ATH.GRC.EU            I  I I I I I
  Internet mail - sv1rd@athnet.ath.forthnet.gr    __===========__
  Amprnet - sv1rd@sv1rd.ampr.org                 /[]  A T H N E T  []\
  Snail Mail - POB 3541 GR-10210 Athens Greece    -  Athens Packet Radio  -
  phone (030-1)3344087   fax 3344049            /   Internetworking Group  \
  PGP Key (v2.6ui): 0x0cbe91fd                 /______________________________\
```

293. Re: [NETSIG:1684] Re: Wire vs RF.

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 13:46:14 PDT
To: netsig@tapr.org
Message-ID: <9507211346.ZM19257@hanko>
Rendered body type: text/plain

On Jul 21, 10:15am, Charles Brabham wrote:

<deletia>

> The NETSIG charter includes the discussion of packet/internet gateways.
>
> Am I to take it that issues surrounding packet/internet gateways will no
> longer be discussed on this SIG?
>
> At all?

I move we strike this topic from the charter.

... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

294. Re: [NETSIG:1676] Re: TCP/IP Disadvantages

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 21 Jul 1995 16:53:05 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507211605.D4035-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Jack, in relation to you observations on HF, I saw something similar when
I was setting up a 10m link between Jacksonville FL and San Jose Costa Rica.

Initially we tested the link using two TNC's, then we did some testing
using NOS, it was MUCH slower than the regular AX.25 link. Then Bob (may he
rest in peace) and I set up a ROSE link over the same path using the same
TNC's and radios. The ROSE link with it's low overhead ran at just about the
same speed as the level 2 Ax.25 path.

Looking at it from all angles all we could come up with was the
difference in overhead. We did not try NetRom because we did not have it
on either end, and the final setup was a link between our two networks so
that users on each end could keyboard back and forth. Both networks are ROSE
so that determined the final configuration.

One more observation, we used both AFSK at 1200b and PSK at 1200b. The
PSK on 28mhz gave us about 1 hour more per day, and that was usually in
the evening, so the users had more keyboard time over that path while we

were running PSK. The PSK modems were loaned to us so we had to return them.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

295. Re: [NETSIG:1653] Re: TCP/IP Disadvantages

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 21 Jul 1995 17:14:46 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507211611.E4035-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Rick, we use it a lot in the Tampa Bay area, the users are not that
numerous, but we give it a lickin'

We also run TCP/IP over ROSE which works quite nicelly. It also lets
us use both low overhead ROSE and level 2 Ax.25 connects for some apps
and take advantage of TCP/IP for SMTP, FTP and other usefull apps.

I have sent some very large files to Double Oak TX over the network, yes
the greater part of that link goes over fibre, but there are several
switches and very busy areas between me and wb5cqu up in Double Oak.

I was still able to send him about 1.8 megs of files, very slow,
intentionally since "it is just a hobby" I set my timing on my NOS box such
that I would only send one TCP frame, and wait for the ACK to come back from
the far end, that way I did not overload the network, and I was able to
send the whole load of files, indeed in about 2 days, but hey... It is
a hobby, and Larry was NOT dying for those files...

What this proved in my view was that TCP/IP could co-exisist with AX.25
activity, ROSE carried it and did not drop the link for the entire 28 hours
that it took to send all that stuff, and I was able to send it, and only
incured the wrath of a MSYS bbs sysop because MSYS showed the IP frames up
on his screen backlit as blue! It did not matter that there was only about
one frame every 30-60 seconds, he still did not like to see that "blue stuff"
on his screen... Ohh well you can not keep them all happy... (need a secret
bit in IP frames to turn the blue off in MSYS ;-]) We were sending IP frames
with a size of 1024 chars, the frame was frag'd at the AX.25 level and sent
out over the network, on the far end the NOS box would put them back
together. ROSE carried the stuff just fine... I think there is a little
problem with the M bit handling right now in ROSE because we still can not
pass large IP frames in the present code, but as long as we keep the IP
frames themselves to 256 chars we have no problem... It did work though...

Disregarding the warts, TCP/IP gives your network a lot of power, and if
handled properly can make for a lot of fun to work with.

I suppose that the major problem that users complain about are the TCP/IP
power users who have their timers set very short so as to grab the freq
every time. But then any type of user who does this can make him/her self
obnoxious with whatever they pour out on the network, AX.25, TCP/IP, ROSE
NetRom, etc.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

296. Re: [NETSIG:1654] RE: ACL/digipeating

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 21 Jul 1995 17:22:04 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507211700.G4035-0100000@gateway.utilpart.com>
Rendered body type: text/plain

The PC-ROSE switch which is a port of Tom's ROSE code runs the TNOS
Conference server AND the TNOS INFORMATION server. Both of which were
done by Brian Lantz, and are found in every TNOS box out there. Dennis
hopes to be able to link the ROSE based Conference to the TNOS system.

This would let us put Conference systems out in areas where there is
not a good RF path for a lot of IP overhead, but at the same time give
those users the same conference ability in their area.

The INFORMATION server was done to allow for larger INFO files than what
are loaded into a TNC, if you have used the one on TNOS you have used the
one on the PC-ROSE switch. You can set it up with menus and select the
INFORMATION areas you are interested in. In my case I run the 813555 INFO
server, which provides series of list of switch addresses on our connected
network. It also provides a mirror of the 813411 directory listing.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

297. Re: [NETSIG:1654] RE: ACL/digipeating

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 14:33:42 PDT
To: netsig@tapr.org
Message-ID: <9507211433.ZM19356@hanko>
Rendered body type: text/plain

On Jul 20, 4:25pm, Laurent Ferracci - F1JKJ wrote:
> Subject: [NETSIG:1654] RE: ACL/digipeating
>
> >Was not very clear - we are looking for "new and interesting toys
> >for the users to play with". APRS is one we are in the process of
> >playing with, but we are looking for more. Some users want to "play
> >with the networking" rather than "play with networked applications"
> >so we are scouting about for toys for them to play with.
>
> You're right. I've just been told, for example, about a new application that
> runs on a PC/Flexnet switch: It's a channel-conference just like IRC: You
> choose a channel, you name it, and users from ALL THE NETWORK will be able
> to join..

We have a similar application here in our network (RT - RoundTable).

16 of the network nodes run the server, all are linked into a
single multi-channel virtual conference bridge.

Runs on PC over BPQ switch.

Available in my software bundle ...

Could split it out and release it as standalone application
if there is interest,

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

298. Re: [NETSIG:1664] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 14:19:25 PDT
To: netsig@tapr.org
Message-ID: <9507211419.ZM19325@hanko>
Rendered body type: text/plain

On Jul 20, 5:50pm, Bruce Perens wrote:
> Subject: [NETSIG:1664] Re: TCP/IP Disadvantages
>
> hank_oredson@MENTORG.COM said:
> > 1. No viable adaptive routing capability.
> This is no longer true. There's an RSPF implementation for Linux that does
> RSPF the way its author intended (which NOS never has).

Is this available for backfit into JNOS?
I played with the rspf in JNOS a bit and it didn't look like it worked
(routing tables munged, crashes.)

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

299. Re: [NETSIG:1692] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 14:15:46 PDT
To: netsig@tapr.org
Message-ID: <9507211415.ZM19320@hanko>
Rendered body type: text/plain

On Jul 21, 2:54pm, Bob Nielsen wrote:
> Subject: [NETSIG:1692] Re: TCP/IP Disadvantages
>
> Joe Buswell, K5JB writes:
>
>
> > Another bit of misinformation refers to TCP/IP solely as an end to end
> > protocol vis BBS store and forward. TCP/IP can be made to do store and
> > forward also with the "in care of" mailing hack, and when necessary this
> > technique works very well. It is very tricky to set this up to work
> > automatically over unpredictable, long, RF circuits, so I show people
> > how to repost mail manually when the need arises. Some of the mail I send
> > to Dallas is forwarded by SMTP from the Dallas station to other TCP/IP
> > stations in Texas. The combination of SMTP and store and forward, is
> > simply the most effective way to send this mail.
>
> With the G8FSL SMTP hopper code, it is quite easy to send SMTP in a
> store and forward mode, using the IP routing information.

Where can I obtain this?

   ... Hank

--

```
Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

300. Re: [NETSIG:1690] ROSE docs

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 14:14:01 PDT
To: netsig@tapr.org
Message-ID: <9507211414.ZM19285@hanko>
Rendered body type: text/plain

```
On Jul 21,  1:53pm, Howard Goldstein wrote:
> Subject: [NETSIG:1690] ROSE docs
> Hank, I'd like some backup from Tom on this but I think the docs you seek
> can be found in the DCC proceedings from I'd like to say '88 (but I'm
> probably wrong on that date) under topic X.25 level 3.

Thanks ... will track those down. Suspect they are actually
lurking about the house somewhere ...

   ...  Hank



--

Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

301. Re: [NETSIG:1691] Re: ROSE docs

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 14:15:06 PDT
To: netsig@tapr.org
Message-ID: <9507211415.ZM19298@hanko>
Rendered body type: text/plain

```
On Jul 21,  2:35pm, Tom Moulton wrote:
> Subject: [NETSIG:1691] Re: ROSE docs
> >Hank, I'd like some backup from Tom on this but I think the docs you seek
> >can be found in the DCC proceedings from I'd like to say '88 (but I'm
> >probably wrong on that date) under topic X.25 level 3.
> >
> >Howie
> >
>
> The paper that Howie is refering to was by Terry Fox, WB4JFI(?) and was a
> proposed AX.25 stack. I think there were some differences from the X.25 spec.

Ah yes!  That tickled the little grey cells.  I remember Terry's paper,
and have a copy of it at home.
>
> I used ISO 8208 1984 when I did my implementation, not Terry's proposal.
>
>
> _____________________________________________
> Thomas A. Moulton, W2VY     RAM Mobile Data
> w2vy@ram.net                (908) 602-5227
>
>-- End of excerpt from Tom Moulton



--

Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

302. Re: [NETSIG:1689] Re: Wire vs RF.

From: n5pvl@texoma.com (Charles Brabham)
Date: Fri, 21 Jul 1995 16:49:52 -0500
To: netsig@tapr.org
Message-ID: <199507212149.QAA24925@ns1.texoma.com>
Rendered body type: text/plain

>Charles, the intent behind the charter statement is to discuss the technical
>and management issues of internet gateways, not to flame endlessly about
>whether wireline links (which is much broader than the gateway issue, anyway)
>will be the death of amateur radio.
>
>Please give it a rest.
>
>John
>

Since I have never at any time predicted that wirelines would bring on the
"death of amateur radio", I can only assume one of the following:

1. You didn't read what was actually said.

2. You read it, but disagree and am engaged in a bit of "flaming", yourself.

3. You read it, but didn't understand it.

4. You read what somebody ELSE claimed I said, and made the assumption that
they knew what they were talking about, in error.

Which one was it, John?

Maybe it's just me, but I see decisions about whether to use RF or landlines
to be a "management decision", which brings it within the charter.

Personally, I don't see what Internet has to do with amateur radio, and
wonder how this area of discussion got into the charter in the first place.
But, since it is there I would assume it's a valid topic of discussion.

I find it interesting that you have decided that I am a source of
difficulty, after I have recieved many postings from "frustrated" wireline
advocates which typically attempt to insult my intellegence and character.
Some of them were downright vile.

But I'm the problem... Right.

John, your bias is showing.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

The probability of anything happening is in inverse ratio to it's desirability.

303. Re: [NETSIG:1699] Re: TCP/IP Disadvantages

From: Bruce Perens <bruce@Pixar.com>
Date: Fri, 21 Jul 1995 15:29:31 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sZQZY-000B3MC@mongo.pixar.com>
Rendered body type: text/plain

hank_oredson@MENTORG.COM said:
> Is this available for backfit into JNOS? I played with the rspf in
> JNOS a bit and it didn't look like it worked (routing tables munged,
> crashes.)

The RSPF implementations in NOS never really worked the way RSPF was intended
to work, though it sort of works. I doubt the Linux RSPFD will find its way
back into NOS, as most NOS developers are finding their way into Linux ;-) .

        Bruce
--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

304. Re: [NETSIG:1704] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 21 Jul 95 16:23:28 PDT
To: netsig@tapr.org
Message-ID: <9507211623.ZM2301@hanko>
Rendered body type: text/plain

On Jul 21, 5:53pm, Bruce Perens wrote:
> Subject: [NETSIG:1704] Re: TCP/IP Disadvantages
>

> hank_oredson@MENTORG.COM said:
> > Is this available for backfit into JNOS? I played with the rspf in
> > JNOS a bit and it didn't look like it worked (routing tables munged,
> > crashes.)
>
> The RSPF implementations in NOS never really worked the way RSPF was intended
> to work, though it sort of works. I doubt the Linux RSPFD will find its way
> back into NOS, as most NOS developers are finding their way into Linux ;-) .

My question was "Is this available ...".

Is it? If so, where?

I can stuff it back into JNOS myself.

But first I need to get it so it can be so stuffed.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

305. Re: [NETSIG:1705] Re: TCP/IP Disadvantages

From: Bruce Perens <bruce@Pixar.com>
Date: Fri, 21 Jul 1995 17:03:40 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sZS2f-0005lKC@mongo.pixar.com>
Rendered body type: text/plain

hank_oredson@MENTORG.COM said:
> My question was "Is this available ...".

ftp.ucsd.edu:/hamradio/packet/tcpip/incoming/rspfd-0.02.tar.gz
You might want to wait for 0.03, as 0.02 has problems with multiple interfaces.

> I can stuff it back into JNOS myself.

I wouldn't discourage you from trying. I do wish you'd start running Linux,
though. I sincerely thing it would improve your productivity over hacking NOS.

        Bruce

--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

306. Re: [NETSIG:1687] Re: TCP/IP Disadvantages

From: "Ronald D. Hackett" <rhackett@crl.com>
Date: Fri, 21 Jul 1995 18:41:51 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950721183535.5570B@crl3.crl.com>
Rendered body type: text/plain

On Fri, 21 Jul 1995, Hank Oredson wrote:

> On Jul 20, 7:34pm, Ken Koster wrote:
>
> > Certainly the widely used tcp/ip systems are not well documented but they
> > are adequately documented for anyone with the desire to learn something new.
> > With a little help from someone who has been there before, anyone can have
> > it up and running in short order. Such help is available everywhere.
> > And the documentation keeps improving.
>
> I do not agree. The documentation is good enough for someone who
> has computer and network background. For someone ignorant of these
> topics, the documentation is near useless; it does not provide the
> high level overview of "why you might want to do these things."
> Improving the documentation to cover these things might help draw
> more hams into using tcp/ip.
>

There are a number of good books that give that high level overview, so I

don't believe it is necessary to try to duplicate them in the
documentation. Perhaps a bibliography in the documentation would help.
Shareware documentation is never on the same level as a commercial
package, but then you get what you pay for :-)

73 de Ron
n8naa


```
*******************************************************************************
Ronald D. Hackett              Internet:      r.hackett@ieee.org
The Packet Rat BBS             Packet Radio:  N8NAA@N8NAA.#SAT.TX.USA.NOAM
San Antonio, Texas, USA        AMPRnet:       n8naa@n8naa.ampr.org
Data/Fax:  (210)494-2849       Fidonet:       1:387/340
*******************************************************************************
```


307. Playing with Our Radios

From: WBRADFORD@delphi.com
Date: Sat, 22 Jul 1995 00:05:38 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HT5FSW1LQA9H3CHN@delphi.com>
Rendered body type: text/plain

Well put, by John AG9V:

 >Guys, it's time to give this a rest. As the NetSIG moderator, I
 >hereby declare the "RF versus wireline" debate closed...

 >This is a hobby, remember?

After reading Megabytes of text, I ask your forgivness for posting
my one message on the subject.

Hank sez:
 >So the conclusion is that wire is *not* ok anywhere on the planet.
 >(and is impractical as we move off-planet ...)

Laurent F1JKJ says:
 >My opinion is that wire is OK when it's BETTER: Faster, more
 >reliable, cheaper, easier... Sysops and users make their CHOICE.
 >Ideological opinions shouldn't have their place here, IMHO.

I say, more power to "wire" or internet means for forwarding messages!
Here in the hinterland of packet, most of our BBS messages arrive
some Weeks after posting on the East Coast. If "wire" works better,
faster, then let's use it. When we used to call "other-than-ham-
band-routes" Wormholes, they were just fine, in fact they were
sought after and desired.

As this is a Hobby, and we have no Boss, we BBS and Node op's do
just as we please, and so it should be. With all the available ways
to send traffic around the country (world), packet really looks like
a broken wagon without a horse for pull power. Is it an obsolete
anachronism? Maybe like morse code? Maybe, but I sure have fun
operating nodes, reading and exchanging messages, and operating
CW on 21.007 Mhz. Remember, it's a Hobby.

Joe K5JB said:

 >I have a radio calling me to play with it.

73 from Bill wbradford@delphi.com
or if you prefer, K7EA@WB7ULH.UT.USA.NOAM
Salt Lake City, Utah....

308. Re: [NETSIG:1700] Re: TCP/IP Disadvantages

From: "Brian A. Lantz" <brian@lantz.com>
Date: Sat, 22 Jul 1995 00:18:26 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507220044.C8286-0100000@lantz.com>
Rendered body type: text/plain

On Fri, 21 Jul 1995, Hank Oredson wrote:

> > With the G8FSL SMTP hopper code, it is quite easy to send SMTP in a
> > store and forward mode, using the IP routing information.
>
> Where can I obtain this?

Just needs to be compiled in, as long as you have the source to a

relatively current JNOS/TNOS. The flag is 'HOPPER' in config.h. If should be
"#define'ed and not '#undef'ed.

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

309. Re: [NETSIG:1687] Re: TCP/IP Disadvantages

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Sat, 22 Jul 95 02:45 EDT
To: netsig@tapr.org
Message-ID: <m0sZYJK-000CFBC@balrog.k8lt.ampr.org>
Rendered body type: text/plain

>
>
>Can you provide either the information on how to "properly design
>a rip routed network" or pointers to that information? The only
>local network setup this way is in Seattle. It works sort of ok
>in the local Seattle metro area, but fails totally on it's boundaries.
>
>

I'm interested too. What do you define as the boundaries, and what
sort of problems are seen?

        /gary
        K8LT

Gary L. Grebus   Home: glg@k8lt.ampr.org
Brookline, NH   Work: grebus@eng.pko.dec.com
                        Ham Packet: K8LT@WA1PHY.#EMA.MA.USA

310. Re: [NETSIG:1688] Re: TCP/IP Disadvantages

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Sat, 22 Jul 95 02:52 EDT
To: netsig@tapr.org
Message-ID: <m0sZYPr-000CFBC@balrog.k8lt.ampr.org>
Rendered body type: text/plain

>
>Totally false. I *never* have to do any manual changes to my netrom
>setup, but must repair and update my ip routings and domain tables
>on a daily basis. If you have to manually make changes to your NET/ROM
>network, then you are not using it's automated routing features.
>
>Turn them back on, and they will work fine. i.e. run the network with
>the default parameters suggested by S-2000, and it works fine.
>
>Is there interest in a discussion of how to setup a NET/ROM network?
>

Absolutely. I think you're the only person I've ever heard say a NET/ROM
network could work well with automatic routing.

What's the topology of the network? What level of control does get
asserted over how nodes are connected?

        /gary
        K8LT

Gary L. Grebus   Home: glg@k8lt.ampr.org
Brookline, NH   Work: grebus@eng.pko.dec.com
                        Ham Packet: K8LT@WA1PHY.#EMA.MA.USA

311. Re: [NETSIG:1709] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Sat, 22 Jul 1995 09:08:59 -0500
To: netsig@tapr.org
Message-ID: <199507221408.JAA02345@ns1.texoma.com>

Rendered body type: text/plain

Despite the fact that the *NOS "package" would be greatly increased in size,
I can't help but feel that there should be a way to choose among ALL the
options during installation, from within a user-friendly install program
which includes it's own mini compiler.
This, in combination with a usable system of automaic routing and new
documentation which is worthy of the name would go far in makeing *NOS
usable for average hams.

If the alleged inability of *NOS to work well over long-haul RF networks is
a fact, and not just another misrepresentation put forward by wireline
advocates, then this will have to be addressed as well.

At this time, the combination of NOSview and G3NRW's NOSintro book is the
most usable setup I'm aware of for the average ham.

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                           Internet : n5pvl@texoma.com

Too bad you can't just grab a tree by the very tiptop and bend it clear over
to the ground and then let her fly, because I bet you'd be amazed at all the
stuff that comes flying out.

312. Re: [NETSIG:1712] Re: TCP/IP Disadvantages

From: tmoulton@ram.net (Tom Moulton)
Date: Sat, 22 Jul 95 11:30:00 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c55@ram.net>
Rendered body type: text/plain

>If the alleged inability of *NOS to work well over long-haul RF networks is
>a fact, and not just another misrepresentation put forward by wireline
>advocates, then this will have to be addressed as well.
>

If by 'work well' you mean transfer data fast then you are right. But if work
well means function properly and give the desired result then I think you are
mistaken.

Since from your personal experience is has not worked well and other people
who have used it say it Can work then I suggest we continue this discussion
in tcp-group@ucsd.edu.

There are more NOS experts in that mailing list than here on netsig.
(I have to admit many of them are here too... but it is a more suitable forum
for the discussion since there are people here who are not the least bit
interested in the specific configuration/operation of xNOS.)

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

313. cooperation on developing softwa

From: KN6UO@aol.com
Date: Sat, 22 Jul 1995 12:19:31 -0400
To: netsig@tapr.org
Message-ID: <950722121929_120536970@aol.com>
Rendered body type: text/plain

Hello all

A while back someone posted a message to the list concerning a group effort
to come up with some great BBS software. I can't remember who posted the
message but it is a great idea. If I remember right Greg posted a reply
saying it was a great idea, but I have not seen any further work being done
on the suggestion. Let me stick my neck out a little and ask, IS ANYTHING
GOING TO HAPPEN WITH THIS GREAT SUGGESTION? Or, is it going to be forgotten.
 So what's up, Hank, Tom, Brian and I am sure there are others out there who
have the knowledge and ability to help, is this going to happen or not!

Greg this is an excellent idea that should not die. It might be time for you
to step in and find someone in TAPR willing to spearhead this idea into a
working BBS program.

If we here on this SIG had been working on something productive (like a BBS
program) for the past few weeks instead of trying to convince each other that
the other persons view points are wrong and that our view point is the only

valid view point which should be on the SIG, then we would be that much
further along.

I am also going to suggest that not only should there be a cooperative effort
on a BBS program, but that there should also be a cooperative effort on a
network program. Both of these programs should, in my opinion, have
everything under the sun in them with the user able to turn on and off the
various features at will.

I do not have to knowledge or ability to write the necessary code, but there
are people on this SIG who can make it happen, and once it gets started there
will probably be others who will jump on the band wagon and assist with the
project. The hard part is getting started! Greg I hope you can help with
the hard part.

Well I have rambled on long enough.

73
Kevin

-- Please no flames, just cooperation

314. Re: [NETSIG:1713] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Sat, 22 Jul 1995 12:15:38 -0500
To: netsig@tapr.org
Message-ID: <199507221715.MAA06824@ns1.texoma.com>
Rendered body type: text/plain

>>If the alleged inability of *NOS to work well over long-haul RF networks is
>>a fact, and not just another misrepresentation put forward by wireline
>>advocates, then this will have to be addressed as well.
>>
>
>If by 'work well' you mean transfer data fast then you are right. But if work
>well means function properly and give the desired result then I think you are
>mistaken.

I can only go by what I am told in this matter, since I've never used NOS to
communicate over a distance (using RF) for more than twenty miles or so.

Our little TCP/IP group has to contend with lots of hills, and few members.
Eventually, we're hoping to "blob onto" the LAN which exists around the D/FW
area, 80 miles away. We can "hear" those guys, but can't haven't gotten a
useful link going yet. The area in between in lightly populated, so our
progress has been slow. (But sure!)

I had suspected that the "burning need" for use of wirelines only existed in
the minds of wireline advocates, but then again I've had people who's
opinions I respect give me the same "connectivity" arguement. If what these
people are saying is inaccurate, they are doing a great dis-service to Ham
Radio TCP/IP.

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Too bad you can't just grab a tree by the very tiptop and bend it clear over
to the ground and then let her fly, because I bet you'd be amazed at all the
stuff that comes flying out.

315. Re: [NETSIG:1639] Re: Networks real and imagined

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Sat, 22 Jul 1995 11:59:45 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sZiq6-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

Continuing the discussion with Hank.. .

> Yup, I'm a bigot on this topic.
>
> > > a "LL Lid" and
> >
> > Perhaps this term has been a bit over-used?
>
> Perhaps not. I just invented it last week. Expect to hear a lot
> more of it.

I was going to delete the above but a little risk in posting never
hurt anything...   So, in jest, does that make you the opposite of
a LL Lid, a "RF Bigot"?   Perhaps it's a complementary term?

> > What would happen if a thousand new hams attempted to join the RF forwarding
> > network with CLOVER boards? Would we be able to build a real network that
> > keyboarders and game players could use? Does CLOVER software use the same
> > tired old point-to-point-to-point means of bulletin passing instead of some
> > better broadcast protocols? Is CLOVER affected by hidden transmitters?
> > How would CLOVER be affected if multiple stations were on a single frequency?
>
> What do you want to build? You will be helping to build it, if you
> choose, so you get to help design it. You tell all of us what you
> want, and if it is ham radio you will get lots of help building it.

Someplace else asked what is wanted out of packet.. Been thinking about that
the past day. Here's what I've come up with so far. At least this is for the
side of packet where it's used as a communications tool - not the entertainment
side of working DX or having random RF contacts.

  I'd like to be able to send a message using the packet system (reliably)
  at the rate of about a thousand miles an hour anywhere on the continent.
  So I would be able to send a note from here (Montana) to Hank (Oregon)
  and have a reply back in a couple hours.   The current network and software
  technology makes the turn around time two days. Assuming the RF network
  was fixed (we have a weak spot crossing the divide) I'd guess the time
  would still be in the range of a whole day.

  I'd like to be able to drop into Hank's BBS directly in real time and
  leave a note or page the operator with a comment on his last posting...
  Currently I've been able to SLOOOWWWLLY node hop far enough to see his
  call on a node list.   With a real network we should be able to NodeHop
  anywhere in the country (world?).

  I'd like to have my system (and all others) have the capability to
  automatically pick up and save for future reading ALL, or at least
  a user selectable portion, of the bulletins being sent. This should be
  done transparently in the background and not affect operation by the
  user.

  I'd like to use the excess net bandwidth to download the latest version
  of JNOS sources from UCSD.

  AND I'd like to do all this to my bicycle system while crossing the
  high plains of Wyoming...

> > How would the overall throughput of a point-to-point-to-point CLOVER
> > network compare to a hub system using tired old 300 bps packet to
> > broadcast bulletins simultaneously to hundreds of local hubs with HF
> > packet receive-only capability?
>
> Do the experiment and find out. I'd probably sign up to help with this
> particular experiment.

Lacking the resources to purchase the (still-overpriced) CLOVER board this
year, I'll do what I can to help build a broadcast-based message passing
protocol into NOS.   (I blew my radio budget for the year on a killer deal on a
Tribander/Rotator/Tower/Boomer deal...)

> > messages. The Internet will continue to grow as a preferred mode until a
> > better means of bringing the bulletins easily and cheaply to the
> > masses is found.
>
> You compare apples and aardvarks again. The internet is not ham radio.

Purity and a quarter will get you a 2 bit cup of coffee (or a game of pool
here in Kevin...). A diode or a wire is not ham radio - but they can be
used to link TNC's into a node stack increasing the usefulness and
capabilities of the system. Maybe that's not a real good comparison - but
the concept is the same.

> > ps.. I forward these discussions on to our local packet network.
> > There have been several cases where I've had to not pass on a brief message
> > with good points because it was followed by hundreds of lines of quoted old
> > messages. Short messages work much better.
>
> These ARE short messages, at least in some packet networks!

Very seldom do messages of over 100 lines travel the Amateur Packet Network..

Anybody have the stats on that? And what percentage of those messages are
re-quotes?

> Sounds like your packet network needs a lot of work.

How many users of your BBS on a 1200 baud circuit could read the entire days
posting of BBSSIG or NETSIG? How many would stay awake through the 100 lines
of old quotes following 10 lines of new comments? It's not the network so
much as the raw time required to read a message.

Yes - the network here needs a lot of work. The community BBS I forward
to shares an user access frequency with a DX Cluster and local keyboarders.
There is NO activity on 03, 05, 07 or 09...   It's no wonder folks there get
bored waiting for a message to download and go off to play on the Internet
with their $80 14.4K modems...

>   ... Hank

--

Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

316. Re: [NETSIG:1642] Re: X1J Suggestion

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Sat, 22 Jul 1995 11:00:19 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sZhuY-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

> If I understand the suggestion correctly, couldn't your objective of bypassing
> the defective UHF link be accomplished by simply perming the VHF link in
> with a path quality parameter higher than assigned to the UHF link?

Yes. That's exactly what I did to bypass the bad path until it warmed
up and the transmitter came back on frequency. The only problem with that
is the manual step required. Had I been gone on one of my not-frequent-enough
adventures the path would have been broken until I or warmer weather returned.

> (This might be a case where automatic link path quality assignments based
> on retries would be useful. As the UHF link drops off frequency, the retry
> rate would increase, decreasing the path quality value until it's lower
> than the VHF link. This would cause the routing to automatically switch
> over to the VHF link).

Yes Yes Yes! This would do a great deal to increase the dynamic routing
ability of NOS. It would eliminate the necessity of hard coding the good
paths that's so essential to make a Node Network work correctly.

How about it? If a path wasn't hard routed and the L2 basic connection
retried out - then drop the path Quality by X points. This would be a
great function to have and shouldn't be too hard to squeeze into the code.

> 73 de Jack

--

Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

ps. On a related topic it should be interesting to note that because we use
X1J nodes with IP routing enabled we were able to continue to route the TCP/IP
packets over the UHF path on the one way circuit keeping at least that traffic
off of the 2 meter side. Can Netrom or other protocols (ROSE, TEXNET) take
advantage of unconnected (UI/Datagram) circuits?

317. Re: [NETSIG:1712] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Sat, 22 Jul 1995 14:19:01 -0500
To: netsig@tapr.org
Message-ID: <199507221919.OAA11250@ns1.texoma.com>
Rendered body type: text/plain

This, in combination with a usable system of automaic routing and new
>documentation which is worthy of the name would go far in makeing *NOS

>usable for average hams.
>

"automaic routing"...

When is this Bozo going to learn how to spell? :->

73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
                            Internet : n5pvl@texoma.com

Program complexity grows until it exceeds the capabilities of the programmer
who must maintain it.

318. Looking for Reviewers

From: jra@ag9v.ampr.org
Date: Sat, 22 Jul 1995 18:04:22 -0400 (EDT)
To: netsig@tapr.org
Cc: gjones@tenet.edu (Greg Jones)
Message-ID: <199507222204.SAA23173@ag9v.ampr.org>
Rendered body type: text/plain

Hi gang --

Some of you know that about three years ago I wrote a beginner's guide to ham
TCP/IP called "IntroNOS." I've been slowly (for the last 18 months) preparing
an update to that document, with an eye toward having TAPR publish it in
hardcopy.

I now have most of the text written, and am working on organization and
tweaking. I could use a couple of people to review the draft for me to help
with both technical accuracy and understandability.

Are one or two of you interested in doing a thorough review for me? I'm
looking for folks who will actually read the doc (it's about 55 typescript
pages at the moment) and send back significant comments within two weeks
of receipt... There's no money in it, but a small amount of fame in the
acknowledgements. :-)

Let me know; I hope to be able to send out an electronic draft by the end
of the week.

73,
John
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

319. Re: [NETSIG:1648] Re: Networks real and imagined -Reply

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230142.AA0017@localhost>
Rendered body type: text/plain

Hello All;
             This is my first contribution to NETSIG. Thought I had
better say hello and let you know that there are some VKs reading it
all.
     I have read the wire v RF discussions and the HF possibilities
using clover etc. Here in VK most of the HF BBSs are using packet with
1200bd PSK and appears to work better than Pactor. Certainly it rattles
along at close to VHF 1200bd speesds most of the time. I have
previously tried to get someone interested in other states in setting
up HF Rose links. However the natural laziness has caused BBSs sysops
to go for Internet links.

    Chucks comments on HF links has stirred me to have another go at it
and if VK7GL is reading this perhaps he might be interested. The
distance about 1200 miles might be a good one for 30 metres.

     I am interested in hearing of any experiences with HF network
linking.

   Barry White
   bewhite@ibm.net

VK2AAB @ VK2AAB.NSW.AUS.OC

320. Re: [NETSIG:1648] Re: Networks real and imagined -Reply

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230143.AA0018@localhost>
Rendered body type: text/plain

Hello All;
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bewhite@ibm.net
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From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230143.AA0019@localhost>
Rendered body type: text/plain

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Barry White
bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

322. Re: [NETSIG:1648] Re: Networks real and imagined -Reply

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230145.AA0020@localhost>
Rendered body type: text/plain

Hello All;
This is my first contribution to NETSIG. Thought I had better say hello and let you know that there are some VKs reading it all.
I have read the wire v RF discussions and the HF possibilities using clover etc. Here in VK most of the HF BBSs are using packet with 1200bd PSK and appears to work better than Pactor. Certainly it rattles along at close to VHF 1200bd speesds most of the time. I have previously tried to get someone interested in other states in setting

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I am interested in hearing of any experiences with HF network linking.

Barry White
bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

323. Re: [NETSIG:1648] Re: Networks real and imagined -Reply

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230145.AA0021@localhost>
Rendered body type: text/plain

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Barry White
bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

324. Re: [NETSIG:1648] Re: Networks real and imagined -Reply

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230146.AA0022@localhost>
Rendered body type: text/plain

Hello All;
This is my first contribution to NETSIG. Thought I had better say hello and let you know that there are some VKs reading it all.
I have read the wire v RF discussions and the HF possibilities using clover etc. Here in VK most of the HF BBSs are using packet with 1200bd PSK and appears to work better than Pactor. Certainly it rattles along at close to VHF 1200bd speesds most of the time. I have previously tried to get someone interested in other states in setting up HF Rose links. However the natural laziness has caused BBSs sysops to go for Internet links.

Chucks comments on HF links has stirred me to have another go at it and if VK7GL is reading this perhaps he might be interested. The distance about 1200 miles might be a good one for 30 metres.

I am interested in hearing of any experiences with HF network linking.

Barry White
bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

325. Re: [NETSIG:1720] Re: Networks real and imagined -Reply

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Sun, 23 Jul 1995 09:48:44 -0400 (EDT)
To: netsig@tapr.org

Message-ID: <Pine.3.89.9507230943.C11170-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Barry, our links that we had between Jacksonville FL and Cerro Buena
Vista Costa Rica (3.5km high mountain) were very good. Since in this
country they do not allow anything faster than 300 baud below 28mhz
we had to keep the test up there. I also tested with a station on
Curacao (second 'c' sounds like a 's') many times on 1200b AFSK on
20m... When the MUF was down low around 20m it worked very well,
when the MUF was high, it sounded good and strong but it would not
print worth a whoot, if you looked at the eye pattern it was all
contaminated with multi-path, where as if you looked at the good signals
on the low MUF path, they eye pattern would be nice and open....

The radios used for all of these test were SSB rigs injecting PSK and
AFSK 1200b data.

In the Costa Rica, Florida link we used a little Uniden 2500 on the CR.
end, The Jacksonville end used a Kenwood but do not remember the model.
This link ran with only 25 watts on the CR side, we did have a small yagi
aimed at the Jacksonvile end.

In the CR Curacao test we used a Kenwood on the CR side and I believe
the Curacao station used a Icom... We ran AFSK this time, Curacao station
did not have PSK...

It was funny that test... I asked the guy if that 1200b was permitted
in the Dutch Antillies, I told him that in Costa Rica it was no problem
because the mode was allocated on bandwidth not speed and we were permitted
3khz bw on 20m in Costa Rica. His reply was no problem, he was the director
of the ptt office there and he would permit 1200b fsk!!

I was never able to get him to set up a switch or other automated facility,
it would have been very interesting to see how we faired there, and even
more interesting to compare PSK and FSK on 20m... On 10m we gained a hour
or more per day of link time by going to PSK...

Chuck.

326. Re: Netrom configuring

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Sat, 22 Jul 1995 15:16:05 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sZlu3-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
> On Jul 21, 12:22am, Joe Buswell, K5JB wrote:
>
> > Hank said recently:
> >
> > >   by hand is a major pain. With NET/ROM it is all automatic.
> >
> > Net/ROM network management is not automatic.
>
> Totally false. I *never* have to do any manual changes to my netrom
> setup, but must repair and update my ip routings and domain tables
> on a daily basis. If you have to manually make changes to your NET/ROM
> network, then you are not using it's automated routing features.
>
> Turn them back on, and they will work fine. i.e. run the network with
> the default parameters suggested by S-2000, and it works fine.

Having recently visited (Node-Hopped) to the Oregon network I can
say that it does seem to need a little configuring...   (Unfortunately
the path from our side is flakey and slow so I can't easily get back
to confirm it.)

The problem with NET/ROM's is that they can't tell the difference between
a good path and a marginal path. And they aren't (yet) smart enough to learn.

For example, the actual 145.010 Mhz network across northern Montana from
the Rocky Mountains to North Dakota looks like this:

   SWT - ZORT - FISH - MTWP

Each single hop link is solid. The problem is that with varing propation
conditions and tropo openings the node broadcasts from "the next node over"
are sometimes picked up. So, if SWT hears FISH just once - even though FISH

could never hear SWT - SWT would think the best path to MTWP was through FISH. That's a path that would not work. The L3 network would be broke until the path was counted down and timed out.

The solution has been to set the quality of HEARD nodes to equal the quality of Nodes included in Broadcasts(100). Then the good paths are hard coded to a higher value(192). So FISH will sometimes show up in SWT's routes list - but the best path, which is through ZORT, will always be taken for actual connections from SWT to FISH or MTWP or beyond. Since we've adopted this technique the circuit seldom fails.

73 - Bill, WA7NWP

From THENET+ 2.10 docfile TN210_10.DOC:

In the early days of networking, it was discovered many areas were subject to short periods of enhanced VHF propagation. When this occurred, distant nodes would suddenly be heard by local nodes. The dynamic routing mechanism of TheNet would be tricked into thinking these were new local nodes and broadcast their existence accordingly. A short while later when conditions returned to normal the network would be confused. It would take several hours for the original routing to be restored. During this period, users would for the most part be unsuccessful in connecting to distant nodes since the "correct" path no longer existed.

Different solutions to this problem were proposed. The technique originally publicized in 1988 by Doug Everitt, N5DUB (then editor of The NODE) began to be universally adopted. Doug recommended the radio path quality parameter be set at a value lower than the standard "192" typically seen for VHF radio paths. He recommended values for parameter 2 be in the range of 40 - 80. The NodeOp would then determine who his reliable neighbors were. The neighbors are then locked to a "standard value" of "192" by use of the SYSOP ROUTES locking command.

Known as "Reliable Neighbors" routing, this technique solved network confusion brought on by periods of temporarily enhanced propagation. Here is how it works. New nodes seen as neighbors are automatically assigned a radio path quality value below the broadcast parameter cut-off value. Since the newly propagated node is not rebroadcast into the network, circuit reliability remains undisturbed. While application of this technique applies mainly to VHF simplex networks, under some circumstances it also may be used with half, full-duplex and, isolated LAN nodes.

327. Re: NOS - TCP/IP comments

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Sat, 22 Jul 1995 16:31:05 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sZn4e-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

Hopefully this isn't carrying on this thread too far... Or too much in the realm of NOS'ish comments... Apologies if it is. Better to say a "little" too much then to hold back on what might be useful info...

Hmmm. I wonder if it's time for a new mailing list. One that would be wide open for all issues and opinions? Maybe call it the "packet-racket" list? Living a hundred miles from anywhere can lead a person to appreciate the activity in the discussions...

Charles said,

> I can't help but feel that there should be a way to choose among ALL the
> options during installation, from within a user-friendly install program

I'd like to see it (DOS-NOS) shrink up to a core program with sysop and user easily-modifiable application modules. NOS would no longer have SMTP, FTP, Mailbox/BBS programs built in - they'd be loaded as needed. And unloaded when not needed. That's what a NOS (Net Operating System) should be.

> This, in combination with a usable system of automatic routing and new
> documentation which is worthy of the name would go far in making *NOS
> usable for average hams.

Having an IP router in the X1J nodes has greatly simplified the IP routing. All a user needs now is:

```
route add default <port> <x1j-node-name>
```

The CMDSHLP4.ZIP files contain a lot of information that adds to the
enjoyment of using the system. Still isn't great for a beginner - it's
hard to beat having an Elmer for getting things set up.

> If the alleged inability of *NOS to work well over long-haul RF networks is
> a fact, and not just another misrepresentation put forward by wireline

What inability?

*NOS on HF == It works, though it's not optimized for it. The AX25 forwarding
is no different than any of the other packet bbs's.. The source is available
which means that I can eventually get around to putting in some code to
automatically change the PACLEN to adjust for varying conditions and optimize
the throughput. I don't think that's available anywhere else.   Heck - if
I'd unsubscribe to these maillists for a couple months I'd probably have
time to add some of these mods to the code I keep talking about.

*NOS on long VHF paths == No difference here than any other packet BBS. NOS
users should recognize that using the base AX25 protocols for bulletin
forwarding is far more efficient than running the TCP/IP methods. In addition,
NOS can use much longer AX25 packets and greatly increase the efficiency
of direct transmissions.

IP protocol on HF == It works but adds overhead and requires medium long
packets. Not normally a good idea. The advantage of being configurable
to never time out may be useful in some situations.

IP protocol on long VHF paths == Here IP can do things that standard, lower
layer AX25 can't, and NETROM is seldom configured for. It can reliably, though
not necessarily efficiently, exchange traffic over long distances. With the
IP routing of X1J covering a large portion of the network it's possible here
to run TCP/IP protocol operations from Calgary Alberta to Northern Wyoming.
I'm not saying this is a good or desirable thing in this or all other cases -
it certainly isn't. But it can be done and there are times where it would
be useful.

On a Hidden-Transmitter-Free paths using X1J nodes the PACLEN can be greatly
increased beyond the 256 byte limit and *NOS/IP systems that also support the
greater packet size will see a dramatic increase in efficiency.

In summary - *NOS on RF paths is not any different than standard AX25 systems
and in some places has advantages.

> At this time, the combination of NOSview and G3NRW's NOSintro book is the
> most usable setup I'm aware of for the average ham.

YES! Somebody getting started in NOS should definitely pick up the book
and use the NOSview package. From there it will be easy to move into JNOS
on DOS or TNOS on Linux.

> 73 DE Charles Brabham   Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM

73, Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

328. [NETSIG:1719] Looking for Reviewers -Reply

From: Orville Beach <orv@micom.com>
Date: Sun, 23 Jul 1995 14:42:13 -0800
To: netsig@tapr.org
Message-ID: <s0127069.007@micom.com>
Rendered body type: text/plain

>>> <jra@ag9v.ampr.org> 07/22/95 07:02pm >>>
Hi gang --

Some of you know that about three years ago I wrote a
beginner's guide to ham
TCP/IP called "IntroNOS." I've been slowly (for the last 18
months) preparing an update to that document, with an eye
toward having TAPR publish it in hardcopy.

I now have most of the text written, and am working on
organization and tweaking. I could use a couple of people
to review the draft for me to help with both technical
accuracy and understandability.

Are one or two of you interested in doing a thorough review
for me? I'm looking for folks who will actually read the doc
(it's about 55 typescript pages at the moment) and send
back significant comments within two weeks of receipt...
There's no money in it, but a small amount of fame in the
acknowledgements. :-)

Let me know; I hope to be able to send out an electronic
draft by the end of the week.

73,
John
-- John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

The last time I volunteered for something I wound up
spending 3 years underwater in a submarine, but..

John, I'm average on NOS, but a good wordsmith. If those
skills are useful, I'll volunteer (eesh - that word still gives me
the creeps...)

73 - Orv - wb6wey
orv@micom.com

329. Re: [NETSIG:1720] Re: Networks real and imagined -Reply

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sun, 23 Jul 1995 17:10:29 -0700
To: netsig@tapr.org
Message-ID: <199507240020.TAA02306@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>Hello All;
>   This is my first contribution to NETSIG. Thought I had
>better say hello and let you know that there are some VKs reading it
>all.
>   I have read the wire v RF discussions and the HF possibilities
>using clover etc. Here in VK most of the HF BBSs are using packet with
>1200bd PSK and appears to work better than Pactor. Certainly it rattles
>along at close to VHF 1200bd speesds most of the time. I have
>previously tried to get someone interested in other states in setting
>up HF Rose links. However the natural laziness has caused BBSs sysops
>to go for Internet links.
>
>   Chucks comments on HF links has stirred me to have another go at it
>and if VK7GL is reading this perhaps he might be interested. The
>distance about 1200 miles might be a good one for 30 metres.
>
>   I am interested in hearing of any experiences with HF network
>linking.
>
>   Barry White
>   bewhite@ibm.net
>   VK2AAB @ VK2AAB.NSW.AUS.OC
>
First, I'd suggest one defines what the word "network" means. If you are
talking strictly a BBS forwarding circuit between one or more partners,
that's one application. If you are talking a network allowing realtime
connects via VHF/UHF packet gateways, that's another application.

In either application it's desireable to design your HF link with several
things in mind.

How many hours a day do you require the circuit to be available? This
depends upon a combination of your traffic loading and application. Once
you make that decision, you can then decide on a frequency band (s) after
you've determined the location of the end station(s).

I've found it helpful at this point to run an HF propagation prediction
program for the intended path(s). There are a number of commercial and
shareware HF prop programs available. If you don't have one already, think
I saw some on ftp.funet.fi in /pub/hamradio/hf-stuff, or there abouts. A
program of moderate cost and easy to impliment that I use is called MINIPROP
by W6EL.

Once you run MINIPROP, you enter the latitude and longitude of your's as
well as the destination station. You also enter the date and either of the

solar flux or the sunspot number for that date. The output will then tell you (for the frequencies you have previously entered) the propagation forcast in terms of signal level for that 24 hour period. You then can decide what band gives you the highest signal levels and whether the time the band is "in" is sufficient for your needs.

MINIPROP also gives you the number of hops to the destination as well as the optimum antenna take-off angle and heading in degrees. If at all possible you want to reach the HF terminal station in a single hop as this reduces the effects of multi-path (multi-path of course, isn't "good" for data since it tends to distort the bits and causes retries).

For myself, I'd tend to seek HF terminal stations that require an optimum antenna take-off angle in the range of 15 - 30 degrees. Here we are talking about an antenna pattern in the vertical plane. As the single hop distance between stations increases, the optimum antenna take-off angle drops closer and closer to ground horizon. The complexity and cost of HF antenna systems delivering maximum vertical patterns below about 15 degrees usually prohibit their consideration. The ARRL handbook has a useful graph showing the influence of antenna height above ground in terms of wavelength, versus vertical radiation pattern. The handbook also gives by type of antenna, plots of typical radiation patterns.

The significance of optimum antenna take-off becomes apparent when you recall that you are designing a "wire line" like link for maximum data throughput. This is most effective when the received carrier levels across the link (using packet) are significantly higher than the noise and interference levels to the channel. The HF link antennas should be tailored to yield the highest amount of gain and directivity for the frequency as practicable. This effort is simplified if only two stations are involved in the link. Additional stations participating in the network at varying geographical locations will compromise data throughput due to the need to simplify the antenna system.

When multiple stations participate in the system, it's wise to establish a workable schedule so only two at a time are passing data to each other. Even though packet is touted as a "multiple user" channel protocol, the facts of life are such that data throughput suffers when more than one transmitter pair is in service. Transmitter powers for packet use should be set for the highest authorized/practicable so's to maintain the best signal-to-noise ratio over the link(s).

Should the band chosen for this service be incapable of delivering the desired circuit availability time, then consideration should be given to allowing the stations to QSY to alternate bands as propagation changes. Quite often the skip lengthens out at night, requiring a change to a lower frequency band. If this is the case, then attention has to be paid to the additional antennas involved. Most of today's HF rigs can easily be configured to automatically QSY at the discretion of a timer.

If your application ISN'T to provide a "realtime" packet user HF gateway, then it's time to look at the trade-offs. The above HF link design considerations are generally true, regardless of the data protocol. However, the expense to implement them might be such that using the new Clover II P38 board becomes cost-effective. The Clover II protocol is especially designed for good HF throughput during marginal conditions. This *could* mean lower power and less than optimum radiation coverage would adequately provide the grade of service required.

In terms of cost and effectivness, the Pactor II protocol should also be examined since I'm told that under certain propagation situations it's as nearly effecient as Clover.

If the HF link requirement dictates the use of ax.25, then possibly the use of PSK modulation will pick up 2-3 dB of circuit margin. Someone on this group cautioned the other day that excessive group delay through filters of SOME rigs may be such as to reduce PSKs effectivness. Before trying PSK, I'd suggest performing a group delay response test on the candidate radios for the link, or seek the advice of those successfully using PSK.

During the operation of our 300 baud 18.105 MHz node gateway a couple years ago, one could frequently hear the sound of 1200 baud PSK in the evenings as the skip lengthened out. Apparently it worked as it was heard month in and month out up to the time the gateway was discontinued. Never did learn where it originated, but suspect it was Asia.

As pointed out by others on here, multi-path effects causes distortion to data waveforms. The stronger the multi-path, the more distortion.   In general, when operating in the HF Maximum Useable Frequency (MUF) region,

multi-path is reduced sufficiently to allow the use of higher data rates (up to a point). In this region the direct signal is much stronger than the reflections and phase distortion is reduced..

During the recent solar maximum, the MUF often exceeded 30 MHz. 1200 baud AFSK on 10 meters was easily supported over 1,000 to 2,000 mile paths. Here in Arizona, side by side comparisons between a half-wave vertical and a 4 element yagi resulted in the yagi yielding superior throughput most of the time. It's suspected the directivity of the yagi caused a reduction in the amplitude of out-of-phase received signals (multi-path). This reduction was enough to not adversely affect the 1200 baud data rate. Signal strengths on both antennas were over S-9 during these observations. Unsupported theory: Phased verticals on the 40 and 30 meter HF bands may, due to their directivity, reduce multi-path and improve throughput.
.
As propagation causes the Maximum Useable Frequency to decrease, a point is reached where atmospheric noise limits the data rate. Under conditions of cyclic noise and static bursts, tests have shown an ax.25 baud rate of around 200 to have superior throughput over 300 baud on the lower HF bands.

73 de Jack
..

330. Re: [NETSIG:1719] Looking for Reviewers

From: GHAUGE@delphi.com
Date: Sun, 23 Jul 1995 20:22:41 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HT80MBVOX49PM4BK@delphi.com>
Rendered body type: text/plain

John - I would be willing to READ your 55 pages and provide comments to you as appropriate. Gary/n4chv (I spend a lot of time reviewing papers)

331. Multi-drop KISS and BPQ

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 23 Jul 1995 19:24:54 -0500
To: netsig@tapr.org
Message-ID: <199507240024.TAA07684@ns1.texoma.com>
Rendered body type: text/plain

BACKGROUND INFO: (Question follows..)

A year or so ago I purchased an AEA PK-96, in hopes of working up some interest in 9600 baud user access to my BBS on 2 meters. Unfortunately, it turns out I'm the only guy in the area with the equipment, so the 9600 baud idea had to go on the "back burner" for the time being. Nobody wanted to "play" !

The PK-96 made a nice desk ornament, but after awhile I decided to just use it at 1200 baud rather than see it go to waste. Despite what some have said, the ALINCO DR-1200 DataRadio I converted for 9600 baud use DID still work out just fine at 1200 baud.

My FBB BBS uses the G8BPQ node software to get past TexNet's "Linked To" connect message, in order to process the connectee's callsign properly for FBB. In the past, I had only used DRSI PCPA cards for TNC's.. The AEA PK-96 was my first exposure to using a KISS TNC with 'BPQ.

Since the PK-96 is set up to take advantage of BPQ's Multi-Dropped KISS TNC option, I decided to give it a try. My theory was that that even though I was using only one KISS TNC, the POLLING and CHECKSUM features of Multi-Dropped KISS system would give increased reliability.

My question is:

Am I correct in thinking this is the best way to go? When using just one KISS TNC, is there really any advantage to the POLLING and CHECKSUM features which work with Multidropped KISS?

(The TNC has been running for four months now, without any problems.)

73 DE Charles Brabham Packet Radio : N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet : n5pvl@texoma.com

I saw a huge steam-roller. It blotted out the sun.
The people all lay down, lay down. They did not try to run.
My love and I, we looked amazed upon this gory mystery.
"Lie down, Lie down!", the people cried, "The great machine is History!"

My love and I, we ran away. The engine did not find us.
We ran off to a mountain-top; Left History far behind us..
Perhaps we should have stayed and died, but somehow we don't think so.
We went to see where History had been, and My! The dead did stink so!

332. Re: [NETSIG:1727] Re: Netrom configuring

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Sun, 23 Jul 95 20:31:22 CST
To: netsig@tapr.org
Message-ID: <20861@k0vm.ampr.org>
Rendered body type: text/plain

In message <m0sZlu3-0002dtC@mtewe.kevin.mt.us> netsig@tapr.org writes:
>
> The problem with NET/ROM's is that they can't tell the difference between
> a good path and a marginal path. And they aren't (yet) smart enough to learn.
>
> For example, the actual 145.010 Mhz network across northern Montana from
> the Rocky Mountains to North Dakota looks like this:
>
>   SWT - ZORT - FISH - MTWP
>
> Each single hop link is solid. The problem is that with varing propation
> conditions and tropo openings the node broadcasts from "the next node over"
> are sometimes picked up. So, if SWT hears FISH just once - even though FISH
> could never hear SWT - SWT would think the best path to MTWP was through
> FISH. That's a path that would not work. The L3 network would be broke until
> the path was counted down and timed out.
>
> The solution has been to set the quality of HEARD nodes to equal the quality
> of Nodes included in Broadcasts(100). Then the good paths are hard coded to a
> higher value(192). So FISH will sometimes show up in SWT's routes list - but
> the best path, which is through ZORT, will always be taken for actual
> connections from SWT to FISH or MTWP or beyond. Since we've adopted this
> technique the circuit seldom fails.
>
> 73 - Bill, WA7NWP
Bill,
  I agree 100% with your analysis of the automatic routing problem
and your NETROM solution. The only way the netrom autorouting
function begans to work is by restricting which nodes you receive
node broadcasts from to those that 1) are reliable RF neighbors and 2)
neighbors that observe the same rule. This requires that the
nodeops be on be aware of new nodes that maybe reliable neighors.
   TO some extent I feel that the early NETROM attempts at
unmanaged auto routing has resulted in some of the the bad press
that NETROM has had.
   I also feel that any attempt at unmanaged auto routing by whatever method
(netrom, rip, rspf) has similar propagation induced problems
given the trade offs between routing table update rate and
available bandwidth. (i.e. to get suitable routing table update
rates at 1200baud may require 100+ % of the bandwidth)

-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

333. Re: [NETSIG:1647] Re: Re: mic...

From: KN6UO@aol.com
Date: Mon, 24 Jul 1995 04:11:48 -0400
To: netsig@tapr.org
Cc: pipe2@oeonline.com
Message-ID: <950724041146_121506018@aol.com>
Rendered body type: text/plain

Bill kb8wyp

I read your post to the list and tried to send a message to your
"pipe2@oeonline.com" address. I received the message back from aol's mailer
saying that is was not able to deliver the mail for 1 day. How do I get the
message to you without posting it to the list.

Kevin

334. Re: [NETSIG:1657] Re: Wire vs RF.

From: paul@paccomm.com
Date: Mon, 24 Jul 95 08:50:04 UTC
To: netsig@tapr.org
Message-ID: <1769@paccomm.com>
Rendered body type: text/plain

Let's face it - TCP/IP _DOES_ carry a lot of overhead,
but it _IS_ an industry standard now and has (thank goodness)
blown away the DEC and IBM competition in protocols........
We should NOT set about inventing some new RF protocol just to
prop up our poor RF links......
What we should do is put together a VERY simple encapsulation layer
to replace the awful AX.25 encapsulation that occurs with NOS (etc.)
right now.....
When making the statement a few weeks ago about AX.25 being an FCC
requirement, several people popped up with "oh no it isn't any
more !".   Get out there you guys and make a low overhead
encapsulation layer for IP and we'll all enjoy a lower overhead
INDUSTRY STANDARD network protocol.
[EtherNet encapsulation is awful in it's overhead - we just need
flags for modem synchronisation and then the IP followed by the
TCP header and then the data ....]

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~    .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \______________/
                                                   ~~~~~~~~~~~~~~~~~~~~~~~
```

335. Re: [NETSIG:1727] Re: Netrom configuring

From: paul@paccomm.com
Date: Mon, 24 Jul 95 09:11:27 UTC
To: netsig@tapr.org
Message-ID: <1774@paccomm.com>
Rendered body type: text/plain

NET/ROM protocol and routing qualities ......

I have pleaded with Dave to implement a connection between the
routing quality of a node and the signal strength for some time....

With the AD board fitted to a TheNet node, there is an ideal
opportunity to relate signal strength to route quality.

A further attack on this problem would be to keep individual route
statistics to measure the degree of re-tries (approx. BER) and
use that also to up or back-off the routing quality.

I believe there are many open avenues in the TheNet code to strenghten
it's ability to provide a robust RF networking environment -
it's just that these avenues are not being taken (yet).


```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~    .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  |   \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Tall rig (58'), Winged Keel (4' 2"), full batten main   /    |     \
                                                       /-----|------` |
PacComm Packet Radio Systems                          `------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \______________/
                                                   ~~~~~~~~~~~~~~~~~~~~~~~
```

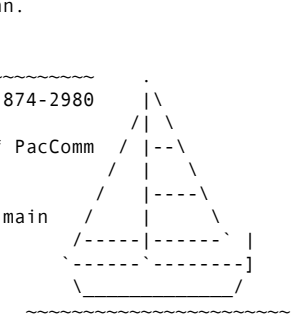

336. Re: [NETSIG:1731] Re: Looking for Reviewers

From: paul@paccomm.com
Date: Mon, 24 Jul 95 09:26:57 UTC
To: netsig@tapr.org
Message-ID: <1779@paccomm.com>
Rendered body type: text/plain

Another volunteer to read your NOS paperwork, John.

Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980
Fax:+1 (813) 872-8696
Views expressed here are not necessarily those of PacComm
Don't surf the net, SAIL it!
Captain of S/V "Spindrift", Dunedin, FL.
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems
4413 N. Hesperides St., Tampa, FL 33614-7618



337. Re: [NETSIG:1735] Re: Wire vs RF.

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 24 Jul 95 09:56:06 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c60@ram.net>
Rendered body type: text/plain

>Let's face it - TCP/IP _DOES_ carry a lot of overhead,
>but it _IS_ an industry standard now and has (thank goodness)
>blown away the DEC and IBM competition in protocols........
>We should NOT set about inventing some new RF protocol just to
>prop up our poor RF links......

>What we should do is put together a VERY simple encapsulation layer
>to replace the awful AX.25 encapsulation that occurs with NOS (etc.)
>right now.....

>When making the statement a few weeks ago about AX.25 being an FCC
>requirement, several people popped up with "oh no it isn't any
>more !".   Get out there you guys and make a low overhead
>encapsulation layer for IP and we'll all enjoy a lower overhead
>INDUSTRY STANDARD network protocol.
>[EtherNet encapsulation is awful in it's overhead - we just need
>flags for modem synchronisation and then the IP followed by the
>TCP header and then the data ....]
>

You want low overhead, you want industry standard, how about X.25?

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

338. Re: [NETSIG:1736] Re: Netrom configuring

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. - AG0N)
Date: Mon, 24 Jul 1995 14:37:09 +0000
To: netsig@tapr.org
Message-ID: <9507241437.AA24036@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

>
>NET/ROM protocol and routing qualities ......
>
>I have pleaded with Dave to implement a connection between the
>routing quality of a node and the signal strength for some time....

I disagree. I know too many 100 mile paths that are better performers than
the 30 mile short ones on the same node.

>A further attack on this problem would be to keep individual route
>statistics to measure the degree of re-tries (approx. BER) and
>use that also to up or back-off the routing quality.

This would seem the better solution. Look at retries, lowers the table
value, backoff the paclen and maxframe, all based on retries. Sound familiar?

..
..
Gary McDuffie, Sr.
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM

339. Re: [NETSIG:1738] Re: Wire vs RF.

From: "Brian A. Lantz" <brian@lantz.com>
Date: Mon, 24 Jul 1995 11:19:27 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507241136.T9858-0100000@lantz.com>
Rendered body type: text/plain

On Mon, 24 Jul 1995, Tom Moulton wrote:

> >When making the statement a few weeks ago about AX.25 being an FCC
> >requirement, several people popped up with "oh no it isn't any
> >more !". Get out there you guys and make a low overhead
> >encapsulation layer for IP and we'll all enjoy a lower overhead
> >INDUSTRY STANDARD network protocol.
> >[EtherNet encapsulation is awful in it's overhead - we just need
> >flags for modem synchronisation and then the IP followed by the
> >TCP header and then the data ....]
> >
>
> You want low overhead, you want industry standard, how about X.25?

I think you missed the point, Tom. Why have ANY encapsulation! Send pure
IP. Can't have any *less* overhead than NONE! ;-)

Brian A. Lantz http://www.lantz.com brian@lantz.com

REAL PORTION of Microsoft Windows code:

```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

340. Re: [NETSIG:1706] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 24 Jul 95 10:30:02 PDT
To: netsig@tapr.org
Message-ID: <9507241030.ZM9672@hanko>
Rendered body type: text/plain

On Jul 21, 8:38pm, Bruce Perens wrote:
> Subject: [NETSIG:1706] Re: TCP/IP Disadvantages
> hank_oredson@MENTORG.COM said:
> > My question was "Is this available ...".
>
> ftp.ucsd.edu:/hamradio/packet/tcpip/incoming/rspfd-0.02.tar.gz
> You might want to wait for 0.03, as 0.02 has problems with multiple
interfaces.

Ok, will wait for the .03 version.

Where do I get gzip for dos or windows or SunOS or HP-UX
(the OS available to me)

> > I can stuff it back into JNOS myself.
>
> I wouldn't discourage you from trying. I do wish you'd start running Linux,
> though. I sincerely thing it would improve your productivity over hacking
NOS.

Just as soon as Intuit releases Quicken for Linux.
The machine on which I do this ham radio work is used for many other
things, which require me to use specific software such as Oracle,
Uniface, Quicken, Access. When these packages are available (and available
at competitive price) for Linux, then Linux becomes a possible choice.

   ... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

341. Re: [NETSIG:1736] Re: Netrom configuring

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 24 Jul 1995 10:30:12 -0700
To: netsig@tapr.org
Message-ID: <199507241740.MAA15116@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

>
>NET/ROM protocol and routing qualities ......
>
>I have pleaded with Dave to implement a connection between the
>routing quality of a node and the signal strength for some time....
>
>With the AD board fitted to a TheNet node, there is an ideal
>opportunity to relate signal strength to route quality.
>
>A further attack on this problem would be to keep individual route
>statistics to measure the degree of re-tries (approx. BER) and
>use that also to up or back-off the routing quality.
>
>I believe there are many open avenues in the TheNet code to strenghten
>it's ability to provide a robust RF networking environment -
>it's just that these avenues are not being taken (yet).
>
>~~~~~~   .
>Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980 |\
>Fax:+1 (813) 872-8696   /| \
>Views expressed here are not necessarily those of PacComm / |--\
>Don't surf the net, SAIL it!   / | \
>Captain of S/V "Spindrift", Dunedin, FL.   / |----\
>Tall rig (58'), Winged Keel (4' 2"), full batten main   / | \
>   /-----|------` |
>PacComm Packet Radio Systems   `------`--------]
>4413 N. Hesperides St., Tampa, FL 33614-7618   _____________/
>   ~~~~~~~~~~~~~~~~~~~~~~~~
>

Off-hand, received signal strenth seems to have a logical relation to path quality. I'd suggest though that additional factors need to be considered. For instance, strong signals with a multi-path component may adversely affect the data rate. Another factor is the extent of channel activity. On a network with other transmitters continously sourcing (A NEDA word meaning transmitting data) a lot of traffic, the node even though signal strength is good, may be held off for long periods of time. In addition, if the co-located companion node transmitter is off-frequency or suffering low RF output, the received signal levels at that site would not identify this situation.

One aspect noted here while NJ7P was testing his telemetry board with the "Plus" nodeware, was a limitation with the voltages he picked off for indicating signal strength. Ideally one would want a linear range of voltage which would yield a nice reading from S-0 to S-9. Most of the radios he experimented with had a rather narrow voltage range between noise, 20 dB quieting and, full-quieting. This caused a little problem due to some of the voltage points being below the resolution of the A/D converter. This condition could allow an S-7 signal to be displayed as S-9, or visa versa. Solutions include using an A/D converter with greater resolution or adding some sort of compensating circuit, with attendant increase in cost and complexity.

Observation here indicates most NodeOps are inclined to go for "Plug and Play" as much as possible. Many will forego the experience of firing up test equipment for the purpose of collecting data points on the node receiver. This is necessary for calibrating it to accurately display the received frequency, deviation, and signal strength that's possible with the node telemetry adaptor.

I don't know of any one factor that can be an all around indicator of "true" path quality.   Having watched the local G8BPQ mountain-top nodes running on XT-clones for the past few years, my sense is that in terms of simple understanding and ease to impliment, path quality based on link retries is a reasonable alternative.

As an aside on XT clones, golly but used ones are showing up cheaply in the 2nd hand markets locally. Prices ranged from $60 to $160 depending upon configuration. I saw one with keyboard, 640K of ram, mono monitor, 360K floppy and 20 meg hard drive for $100 last week. Compared to the average used price of a TNC-2 clone, this represents an excellent buy for some

packet applications.

73 de Jack

342. Re: [NETSIG:1710] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 24 Jul 95 13:02:34 PDT
To: netsig@tapr.org
Message-ID: <9507241302.ZM9892@hanko>
Rendered body type: text/plain

On Jul 22, 2:00am, Gary L. Grebus wrote:
> Subject: [NETSIG:1710] Re: TCP/IP Disadvantages
> >
> >
> >Can you provide either the information on how to "properly design
> >a rip routed network" or pointers to that information? The only
> >local network setup this way is in Seattle. It works sort of ok
> >in the local Seattle metro area, but fails totally on it's boundaries.
> >
> >
>
> I'm interested too. What do you define as the boundaries, and what
> sort of problems are seen?

Here is one example of the problems I observe:

There are three different network links between the Seattle Metro
area and the Portland Metro area. The ip folks in Seattle have not
been able to find any way to have ip connects across these links
re-route when a link fails: someone on each end has to manually
edit routing tables to cause ip to use a backup route.

"Just use rip" does not work, because rip will simply continue to
report the failed route as the desired route ... until everyone who
is broadcasting routes hand edits their routing tables.

Yes, I know that protocols other than rip may solve this problem.
I'd like to experiment with one or another of them, and may do
so later this year.

    ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

343. Re: [NETSIG:1711] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 24 Jul 95 13:05:41 PDT
To: netsig@tapr.org
Message-ID: <9507241305.ZM9898@hanko>
Rendered body type: text/plain

On Jul 22, 2:23am, Gary L. Grebus wrote:
> Subject: [NETSIG:1711] Re: TCP/IP Disadvantages
> >
> >Totally false. I *never* have to do any manual changes to my netrom
> >setup, but must repair and update my ip routings and domain tables
> >on a daily basis. If you have to manually make changes to your NET/ROM
> >network, then you are not using it's automated routing features.
> >
> >Turn them back on, and they will work fine. i.e. run the network with
> >the default parameters suggested by S-2000, and it works fine.
> >
> >Is there interest in a discussion of how to setup a NET/ROM network?
> >
>
> Absolutely. I think you're the only person I've ever heard say a NET/ROM
> network could work well with automatic routing.
>
> What's the topology of the network?

Spider web. That is, it is multi-connected overlayed hub and spokes,
with multiply redundant paths between any pair of nodes.

> What level of control does get
> asserted over how nodes are connected?

None at all.

Everyone who installs network resources coordinates with the owners
of existing resources. No "control" is exerted: if someone decides
to put up a node, the network owners welcome them to the network.

Resources are resources, and more is always better than less.

   ... Hank

--

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Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

344. Re: [NETSIG:1714] cooperation on developing softwa

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 24 Jul 95 13:18:03 PDT
To: netsig@tapr.org
Message-ID: <9507241318.ZM9926@hanko>
Rendered body type: text/plain

On Jul 22, 11:32am, KN6UO@aol.com wrote:

> I am also going to suggest that not only should there be a cooperative effort
> on a BBS program, but that there should also be a cooperative effort on a
> network program. Both of these programs should, in my opinion, have
> everything under the sun in them with the user able to turn on and off the
> various features at will.

>From my viewpoint as software author, the most important thing this group
could do is to provide detailed ideas, and, if possible, specifications
for desired features.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

345. Re: [NETSIG:1716] Re: Networks real and imagined

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 24 Jul 95 13:36:04 PDT
To: netsig@tapr.org
Message-ID: <9507241336.ZM9949@hanko>
Rendered body type: text/plain

On Jul 22, 1:09pm, Bill Vodall wrote:

>   I'd like to be able to send a message using the packet system (reliably)
>   at the rate of about a thousand miles an hour anywhere on the continent.
>   So I would be able to send a note from here (Montana) to Hank (Oregon)
>   and have a reply back in a couple hours.   The current network and software
>   technology makes the turn around time two days. Assuming the RF network
>   was fixed (we have a weak spot crossing the divide) I'd guess the time
>   would still be in the range of a whole day.

Let's try to put some numbers on this 1000 mph concept ... and assume
that the path of interest is indeed 1000 miles (it's not far off).

Local BBS systems forward traffic headed out of region to a "regional
intertie" BBS. For the case of Oregon -> Montana, this system is
N7QDN, locatd in the Portland Metro area. He forwards to Eastern
Washington on a ten minute cycle. This is a 125 mile hop. There would
be 8 such hops in 1000 miles, plus one or two hops to get to/from the
regional intertie systems. Call it ten BBS hops or "100 miles per hop"
on average. If each system forwards on a ten minute cycle, there would

be on average a five minute delay at each hop, for a total one way
delay of 50 minutes. Thus the round trip delay would be a bit less
than two hours, and several exchanges of message per day would be
possible.

What did I assume to get these results?

1. BBS forward on a ten minute cycle.
2. BBS always forward presented traffic without delay, other
    than the delay incured waiting until the next cycle.
3. There is end-to-end BBS forwarding connectivity across
    the path of interest.
4. The average long haul forwarding hop length is 100 miles.

The above assumptions describe the BBS forwarding network as we run
it in the Portland Metro area (and as it is run in the surrounding
areas as well).

Question: what is the problem on the path between us? Where does
the delay occur? Why does delay occur at that point or points?

For paths which require HF linking, two factors will change:
hops will be longer, delay between forwarding cycles will be longer.

>   I'd like to be able to drop into Hank's BBS directly in real time and
>   leave a note or page the operator with a comment on his last posting...
>   Currently I've been able to SLOOOWWWLLY node hop far enough to see his
>   call on a node list.   With a real network we should be able to NodeHop
>   anywhere in the country (world?).

Agree. I've never made it as far east as Montana ... seem to get lost
somewhere in Idaho or Alberta.

>   I'd like to have my system (and all others) have the capability to
>   automatically pick up and save for future reading ALL, or at least
>   a user selectable portion, of the bulletins being sent. This should be
>   done transparently in the background and not affect operation by the
>   user.

My code has this capability, except that it is not exposed to the users.
The sysop determines what is saved. The hard question is how to name
the saved bulletins, so they can later be found. Ideas appreciated.

<deletia>

   ... Hank

--

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Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

346. Re: [NETSIG:1718] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 24 Jul 95 13:38:04 PDT
To: netsig@tapr.org
Message-ID: <9507241338.ZM9954@hanko>
Rendered body type: text/plain

On Jul 22, 2:33pm, Charles Brabham wrote:
> Subject: [NETSIG:1718] Re: TCP/IP Disadvantages
> This, in combination with a usable system of automaic routing and new
> >documentation which is worthy of the name would go far in makeing *NOS
> >usable for average hams.
> >
>
> "automaic routing"...
>
> When is this Bozo going to learn how to spell? :->

Oh yeah ... it was "automaniac routing" ... a new scheme about to
be added to NET/ROM, NOS, and the dx cluster.

   ... Hank

```
--

Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

347. Re: [NETSIG:1740] Re: Wire vs RF.

```
From: mwestfal@indigo.csci.csusb.edu (Michael Westfall)
Date: Mon, 24 Jul 1995 19:48:21 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <9507250248.AA16001@indigo.csci.csusb.edu>
Rendered body type: text/plain
```

```
In a former treatise, Brian A. Lantz spake thusly:
->
-> On Mon, 24 Jul 1995, Tom Moulton wrote:
->
-> > >When making the statement a few weeks ago about AX.25 being an FCC
-> > >requirement, several people popped up with "oh no it isn't any
-> > >more !".    Get out there you guys and make a low overhead
-> > >encapsulation layer for IP and we'll all enjoy a lower overhead
-> > >INDUSTRY STANDARD network protocol.
-> > >[EtherNet encapsulation is awful in it's overhead - we just need
-> > >flags for modem synchronisation and then the IP followed by the
-> > >TCP header and then the data ...........]
-> > >
-> >
-> > You want low overhead, you want industry standard, how about X.25?
->
-> I think you missed the point, Tom. Why have ANY encapsulation! Send pure
-> IP. Can't have any *less* overhead than NONE! ;-)


I'm confused. Can you run a network without a link layer? If so, why don't
the commercial networks do it that way?

I can see how it could work on dedicated point-to-point links, but how's it
gonna work on a multiple access channel? How is a packet that needs to be
routed onto a different channel be aimed at the appropriate station? And
what's to keep several different stations from trying to route the same
packet?

Around here, we use AX.25 UI frames to encapsulate IP. There's not really
that much overhead in UI frames....

Just curious.



->
->
-> ------------------------------------------------------------
-> Brian A. Lantz     http://www.lantz.com     brian@lantz.com
->
-> REAL PORTION of Microsoft Windows code:
->      while (memory_available)        {
->              eat_major_portion_of_memory (no_real_reason);
->              if (feel_like_it)
->                      make_user_THINK (this_is_an_OS);
->              gates_bank_balance++;
->      }
->
->
->


--------------------------------------------------------------------------------
73 de Mike,      ax.25net:    N6KUY@W6JBT.#SOCA.CA.USA.NOAM
                  amprnet:    n6kuy@n6kuy.ampr.org [44.18.0.49]
                internet :    mwestfal@silicon.csci.csusb.edu
Linux: the Gates of Hell shall not prevail.
GCS/M { -d+ p+ c++ l u++ e+(*) m++(-) s/+ !n-(---) h-- !f g+ w+ t++ r-(--) y+ }
--------------------------------------------------------------------------------
```

348. Long Distance Packet links on HF

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230312.AA0023@localhost>
Rendered body type: text/plain

Hello All;
This is my first contribution to NETSIG. Thought I had

better say hello and let you know that there are some VKs reading it

all.
I have read the wire v RF discussions and the HF possibilities

using clover etc. Here in VK most of the HF BBSs are using packet with

1200bd PSK and appears to work better than Pactor. Certainly it rattles

along at close to VHF 1200bd speesds most of the time. I have

previously tried to get someone interested in other states in setting

up HF Rose links. However the natural laziness has caused BBSs sysops

to go for Internet links.

Chuck's comments on HF links has stirred me to have another go at
it

and if VK7GL is reading this perhaps he might be interested. The

distance about 1200 miles might be a good one for 30 metres.

I am interested in hearing of any experiences with HF network

linking.

Barry White
bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

349. Long Distance Packet links on HF

From: bewhite@ibm.net
Date: Sat, 22 Jul 95 18:32:04
To: netsig@tapr.org
Message-ID: <9507230313.AA0024@localhost>
Rendered body type: text/plain

Hello All;
This is my first contribution to NETSIG. Thought I had

better say hello and let you know that there are some VKs reading it

all.
I have read the wire v RF discussions and the HF possibilities

using clover etc. Here in VK most of the HF BBSs are using packet with

1200bd PSK and appears to work better than Pactor. Certainly it rattles

along at close to VHF 1200bd speesds most of the time. I have

previously tried to get someone interested in other states in setting

up HF Rose links. However the natural laziness has caused BBSs sysops

to go for Internet links.

Chuck's comments on HF links has stirred me to have another go at
it

and if VK7GL is reading this perhaps he might be interested. The

distance about 1200 miles might be a good one for 30 metres.

I am interested in hearing of any experiences with HF network

linking.

Barry White

bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

350. RE: [NETSIG:1740] Re: Wire vs RF.

From: roberts@ses6a.bt.co.uk
Date: Tue, 25 Jul 1995 09:20:54 +0100
To: netsig@tapr.org
Message-ID: <199507250833.DAA29138@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Hmm.

pure IP ?

No encapsulation ?

Look, IP addresses are used for two purposes, addressing and routing.

If all you do is to send IP frames over a single link to their
destination then no problem. As soon as you get to a broadcast system,
you need to make sure it is picked up by the right station.

IP is an Inter-Network (i.e. between networks) protocol that needs
link layer (or equivalent) to manage the passing of data across
the inter router networks.

Otherwise, you need to invent another encapsulation protocol to sit
around it. This is a link layer protocol such as LAPB not a network
layer protocol that we are talking about here before you jump in Tom.
Basic SDLC, LAPB, HDLC etc.

As a minimum it should include the link sender, link destination
and perhaps a checksum. What to use as addresses ? One possibility
is the destination IP address, 4 bytes, another is the callsign,
7 bytes. A three byte saving until we move to IPNG, when IP addresses
are bigger than callsigns !. We could go to Connection Oriented
as opposed to Connectionless (IPers would love that !) and perhaps
lose the whole header, but the saving for a large frame would only
be about 1%, and you still need to distinguish the destination in
a broadcast environment so basic HDLC alone is no use.

Radio links are not yet anywhere near reliable enough in my humble
opinion for no checksums - otherwise we could all use Frame Relay,
so perhaps we need a checksum.

With the exception of the odd byte, what have you got ? UI frames.

It is easy to try to re-invent solutions to a problem. It is
rarely easy. Also be careful of the investment vs savings. On a 9600
baud link, ten bytes of header (just a round number for discussion)
takes 10 msec. You can achieve better efficiency gains by dropping
txd a bit. We can all find links with small txds (we can all find
full duplex links too before you flame me) but 99.9% of the amateur
radio systems have txds in the range 250 - 500 msec at the moment.

Dave

351. RE: [NETSIG:1736] Re: Netrom configuring

From: roberts@ses6a.bt.co.uk
Date: Tue, 25 Jul 1995 09:21:08 +0100
To: netsig@tapr.org
Message-ID: <199507250833.DAA29140@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Point noted Paul

I'm currently looking at the shoehorn - how to get it all in !

Dave

352. Re: Wrong Network Model

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Tue, 25 Jul 1995 02:29:43 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0safN5-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

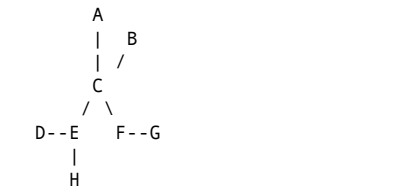
>
> >
> >The design was right! Each backbone node would have a VHF user access port
> >and a single UHF transmitter. The UHF transmitter would be tied to multiple
> >receivers and TNC's, one set for each incoming node. Thus NO hidden
> transmitters
> >
> >Bill
> >
> Hi Bill, et. al.
>
> It sounds like your best move at this point would be to actually solve the
> hidden transmitter problem - pretty simply. Turn your system into a
> repeater - or preferably a bit regenerator.

Bob,

YES! I have been advocating the use of Bit-Regenerating repeaters out
here for the past couple years. It seems to me that having a fairly simple
repeater at a hard to reach location makes more sense than having multiple
TNC's and radios. It's an idea that's time has come.

It may be the ideal solution to the bottleneck node of the Montana UHF
backbone. There's one gotcha to the setup and I'm now coming to the
belief that it wouldn't be overly serious.

The system looks like this:



It's pretty easy to see that C is the weak link in the system. Making it
a Regen would eliminate the collisions from A, B, E and F and allow them
to see each other and exchange packets directly with no node retransmission
delay. Two big improvements for the network.

Stations A and B go nowhere else and would work great. The problem I'm
envisioning is when E or F send to D and H or G respectively. That added
traffic will also be heard by A and B cutting down on the throughput in
the cell. In addition, the hidden transmitter problem is moved to E and
F. D, H and (A,B,C,F) will be colliding at E. As will G and the (A,B,C,E)
cell at F.

(A, C, E, F, G, and H are Nodes, B and D are community BBS's.)

I am now of the opinion that turning C into a Regen would be a good thing
to do and am starting to work on a brief write up to forward to the folks
that manage the node. Does this make sense?

> Give that some thought. We've had really good success here in the Seattle
> area with repeaters - one on 222 MHz has been there for over 10 years.

Three years ago I was approaching Calgary and some packet friends there
said "the repeater is on ....".   I still remember having the thought "I
don't care about a repeater - what node do I connect to?" I was young and
foolish.

Having spent several evenings since then watching the traffic flow through
the repeater in Calgary and comparing it to the clutter on our local 145.010
node with a 100 mile radius range that encompasses a half dozen
other nodes and dozens of users - I'm a convert to the magic of packet
repeaters.

>
> 73, and good luck building the network.
>
> Bob
> --
>   Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
>   Western Washington Amateur IP Address Coordinator   (206) 775-3651
> --

>

Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

353. Re: [NETSIG:1741] Re: TCP/IP Disadvantages

From: Bruce Perens <bruce@Pixar.com>
Date: Tue, 25 Jul 1995 14:17:34 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sarM6-00052VC@mongo.pixar.com>
Rendered body type: text/plain

--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

354. Re: [NETSIG:1633] Re: Bulletins vs Mail

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 25 Jul 1995 15:23:55 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950725151717.23750B-100000@acca>
Rendered body type: text/plain

On Thu, 20 Jul 1995 gwyn@paccomm.com wrote:

> Personal observation about the purpose of digital networks.
>
> I lean toward the idea of a network doing more than forwarding mail, especially
> in a store (on disk) and forward (next hour) manner.

        snip....

>
> BBS forwarding is an application which makes use of a network, it is not
> the network.
>

        Correction Gwyn, there IS a PBBS Network! This network allows
your mail for Joe Ham w3fun in MouseJaw, WY to receive that message. It
is stored and forwarded. Even at the BEST of times you could not get from
Florida to Wyoming with node hopping.

        We do USE the network, and may abuse it as well. I hope we are
all smart and work out the problems without a fight and name-calling...:)

73, karl k5di

355. Apology -- mail loss

From: Steve Fram <steve@igc.apc.org>
Date: Tue, 25 Jul 1995 14:28:16 -0700
To: netsig@tapr.org
Message-ID: <199507252128.OAA12703@cdp.igc.apc.org>
Rendered body type: text/plain

Due to an error on our system, a message you sent at:

    24-July-1995 20:16 Pacific Daylight Time (PDT)

to:

    cahill@chasque

was not delivered.

Unfortunately, you will need to resend that message. The problem
that caused the failure has been repaired, and you should experience
no problems if you try to send the same message again.

Please send a note to me ('steve@igc.apc.org') or to IGC user support
('support@igc.apc.org') if you need any additional assistance.

Again, apologies for any inconvenience caused by this problem.

Sincerely,

Steve Fram
Technical Director, IGC
email: 'steve@igc.apc.org'

356. Re: [NETSIG:1741] Re: TCP/IP Disadvantages

From: Bruce Perens <bruce@Pixar.com>
Date: Tue, 25 Jul 1995 14:33:20 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sarbM-00052NC@mongo.pixar.com>
Rendered body type: text/plain

hank_oredson@MENTORG.COM said:
> Where do I get gzip for dos or windows or SunOS or HP-UX (the OS
> available to me)

The source is on prep.ai.mit.edu:/pub/GNU .

>> I do wish you'd start running Linux, though.

> [when] Oracle, Uniface, Quicken, Access. When these packages are
> available (and available at competitive price) for Linux, then Linux becomes
> a possible choice.

Well, Quicken has been known to run under WINE (the Windows Emulator that runs
under Linux and 386BSD), I don't know about the others.
It costs about $500 to build a '486 these days. I built my wife one to run
Windows, Word, and Quicken on, so that I could run Linux on my own system.

        Bruce

--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

357. Apology -- mail loss

From: Steve Fram <steve@igc.apc.org>
Date: Tue, 25 Jul 1995 14:58:51 -0700
To: netsig@tapr.org
Message-ID: <199507252158.OAA17740@cdp.igc.apc.org>
Rendered body type: text/plain

Due to an error on our system, a message you sent at:

    25-July-1995 00:27 Pacific Daylight Time (PDT)

to:

    cahill@chasque

was not delivered.

Unfortunately, you will need to resend that message. The problem
that caused the failure has been repaired, and you should experience
no problems if you try to send the same message again.

Please send a note to me ('steve@igc.apc.org') or to IGC user support
('support@igc.apc.org') if you need any additional assistance.

Again, apologies for any inconvenience caused by this problem.

Sincerely,

Steve Fram
Technical Director, IGC
email: 'steve@igc.apc.org'

358. Apology -- mail loss

From: Steve Fram <steve@igc.apc.org>
Date: Tue, 25 Jul 1995 14:58:59 -0700
To: netsig@tapr.org
Message-ID: <199507252158.OAA17754@cdp.igc.apc.org>
Rendered body type: text/plain

Due to an error on our system, a message you sent at:

    25-July-1995 00:30 Pacific Daylight Time (PDT)

to:

    cahill@chasque

was not delivered.

Unfortunately, you will need to resend that message. The problem
that caused the failure has been repaired, and you should experience
no problems if you try to send the same message again.

Please send a note to me ('steve@igc.apc.org') or to IGC user support
('support@igc.apc.org') if you need any additional assistance.

Again, apologies for any inconvenience caused by this problem.

Sincerely,

Steve Fram
Technical Director, IGC
email: 'steve@igc.apc.org'

359. Apology -- mail loss

From: Steve Fram <steve@igc.apc.org>
Date: Tue, 25 Jul 1995 15:03:08 -0700
To: netsig@tapr.org
Message-ID: <199507252203.PAA19095@cdp.igc.apc.org>
Rendered body type: text/plain

Due to an error on our system, a message you sent at:

    25-July-1995 01:45 Pacific Daylight Time (PDT)

to:

    cahill@chasque

was not delivered.

Unfortunately, you will need to resend that message. The problem
that caused the failure has been repaired, and you should experience
no problems if you try to send the same message again.

Please send a note to me ('steve@igc.apc.org') or to IGC user support
('support@igc.apc.org') if you need any additional assistance.

Again, apologies for any inconvenience caused by this problem.

Sincerely,

Steve Fram
Technical Director, IGC
email: 'steve@igc.apc.org'

360. Apology -- mail loss

From: Steve Fram <steve@igc.apc.org>
Date: Tue, 25 Jul 1995 15:03:12 -0700
To: netsig@tapr.org
Message-ID: <199507252203.PAA19100@cdp.igc.apc.org>
Rendered body type: text/plain

Due to an error on our system, a message you sent at:

    25-July-1995 01:50 Pacific Daylight Time (PDT)

to:

    cahill@chasque

was not delivered.

Unfortunately, you will need to resend that message. The problem
that caused the failure has been repaired, and you should experience
no problems if you try to send the same message again.

Please send a note to me ('steve@igc.apc.org') or to IGC user support
('support@igc.apc.org') if you need any additional assistance.

Again, apologies for any inconvenience caused by this problem.

Sincerely,

Steve Fram
Technical Director, IGC
email: 'steve@igc.apc.org'

361. Apology -- mail loss

From: Steve Fram <steve@igc.apc.org>
Date: Tue, 25 Jul 1995 15:20:16 -0700
To: netsig@tapr.org
Message-ID: <199507252220.PAA21257@cdp.igc.apc.org>
Rendered body type: text/plain

Due to an error on our system, a message you sent at:

    25-July-1995 04:22 Pacific Daylight Time (PDT)

to:

    cahill@chasque

was not delivered.

Unfortunately, you will need to resend that message. The problem
that caused the failure has been repaired, and you should experience
no problems if you try to send the same message again.

Please send a note to me ('steve@igc.apc.org') or to IGC user support
('support@igc.apc.org') if you need any additional assistance.

Again, apologies for any inconvenience caused by this problem.

Sincerely,

Steve Fram
Technical Director, IGC
email: 'steve@igc.apc.org'

362. Re: [NETSIG:1759] Apology -- mail loss

From: mark@tetherless.com (Mark Oppenheim)
Date: Tue, 25 Jul 1995 17:20:21 -0700
To: netsig@tapr.org, steve@igc.apc.org
Message-ID: <199507260020.RAA21298@gorgor.pa.tetherless.com>
Rendered body type: text/plain

How many times will we see this message?
It keeps returning like some African Virus.

Please STOP THE INSANITY!

(probably one of them UNIX systems run amok!)

Mark

At 05:11 PM 7/25/95 -0500, Steve Fram wrote:
>Due to an error on our system, a message you sent at:
>
>   25-July-1995 00:30 Pacific Daylight Time (PDT)
>

Chaffage omitted....

363. Low Bit Rate CODEXs

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 26 Jul 95 07:44:32 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c6a@ram.net>
Rendered body type: text/plain

Does anyone have experience with Low Bit Rate CODEX chips?

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

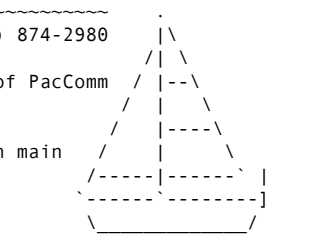
364. Re: [NETSIG:1764] Low Bit Rate CODEXs

From: paul@paccomm.com
Date: Wed, 26 Jul 95 11:09:50 UTC
To: netsig@tapr.org
Message-ID: <2023@paccomm.com>
Rendered body type: text/plain

I think there was an article in QEX not too long ago
regarding experiments with CODECs. If you can't find anything
there, I'll do some head scratching to remember where it was!

~~~~~~
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980
Fax:+1 (813) 872-8696
Views expressed here are not necessarily those of PacComm
Don't surf the net, SAIL it!
Captain of S/V "Spindrift", Dunedin, FL.
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems
4413 N. Hesperides St., Tampa, FL 33614-7618



365. Re: [NETSIG:1713] Re: TCP/IP Disadvantages

From: Barry McLarnon VE3JF <bm@hydra.carleton.ca>
Date: Wed, 26 Jul 1995 11:46:12 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507261546.LAA05522@hydra.carleton.ca>
Rendered body type: text/plain

Tom W2VY opines:
> Since from your personal experience is has not worked well and other people
> who have used it say it Can work then I suggest we continue this discussion
> in tcp-group@ucsd.edu.
>
> There are more NOS experts in that mailing list than here on netsig.
> (I have to admit many of them are here too... but it is a more suitable forum
> for the discussion since there are people here who are not the least bit
> interested in the specific configuration/operation of xNOS.)

Good grief. There are also people here who are not the least bit
interested in ROSE, which you relentlessly promote here at every available
opportunity. So how about taking THAT discussion somewhere else too?

Seriously, if we insist on discussion topics that each and every NETSIG
subscriber will be interested in, then there will be nothing left to say,
and we might as well close it down. It's easy to ignore a topic that
doesn't interest you - just hit that 'delete' key.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | AMPRnet: barry@va3tcp.ampr.org
  Packet Working Group | FreeNet: aa187@freenet.carleton.ca

366. Re: [NETSIG:1766] Re: TCP/IP Disadvantages

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 26 Jul 95 12:08:01 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c6c@ram.net>
Rendered body type: text/plain

>Tom W2VY opines:
>> Since from your personal experience is has not worked well and other peopl
>e
>> who have used it say it Can work then I suggest we continue this discussio
>n
>> in tcp-group@ucsd.edu.
>>
>> There are more NOS experts in that mailing list than here on netsig.
~~~~~~

>> (I have to admit many of them are here too... but it is a more suitable fo
>rum
>> for the discussion since there are people here who are not the least bit
>> interested in the specific configuration/operation of xNOS.)
>

Note that ROSE was not mentioned in the above.

>Good grief. There are also people here who are not the least bit
>interested in ROSE, which you relentlessly promote here at every available
>opportunity. So how about taking THAT discussion somewhere else too?

ROSE specific questions ARE taken elsewhere. I mention ROSE to help educate
people about it, I do not send endless disconnected ROSE related messages.

Yours is the first message that I have gotten indicating that any of my
promotion of ROSE has been at all out of place.

Yes there have been discussions about ROSE (Fall of last year) but they were
answering questions people ASKED!

>Seriously, if we insist on discussion topics that each and every NETSIG
>subscriber will be interested in, then there will be nothing left to say,
>and we might as well close it down. It's easy to ignore a topic that
>doesn't interest you - just hit that 'delete' key.
>

True but in the quoted message I was trying to help Charles get a better
answer to what he was getting from here about TCP/IP and long haul links.

He did not know about tcp-group and there are very likely more people better
equiped to answer his question there. Wouldn't you agree?

_____ _____ _____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

367. Re: [NETSIG:1766] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 26 Jul 95 10:33:28 PDT
To: netsig@tapr.org
Message-ID: <9507261033.ZM14560@hanko>
Rendered body type: text/plain

On Jul 26, 10:53am, Barry McLarnon VE3JF wrote:
> Subject: [NETSIG:1766] Re: TCP/IP Disadvantages
> Tom W2VY opines:
> > Since from your personal experience is has not worked well and other people
> > who have used it say it Can work then I suggest we continue this discussion
> > in tcp-group@ucsd.edu.
> >
> > There are more NOS experts in that mailing list than here on netsig.
> > (I have to admit many of them are here too... but it is a more suitable
forum
> > for the discussion since there are people here who are not the least bit
> > interested in the specific configuration/operation of xNOS.)
>
> Good grief. There are also people here who are not the least bit
> interested in ROSE, which you relentlessly promote here at every available
> opportunity. So how about taking THAT discussion somewhere else too?
>
> Seriously, if we insist on discussion topics that each and every NETSIG
> subscriber will be interested in, then there will be nothing left to say,
> and we might as well close it down. It's easy to ignore a topic that
> doesn't interest you - just hit that 'delete' key.

I find this discussion uninteresting.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

368. Re: [NETSIG:1766] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 26 Jul 1995 12:47:04 -0500
To: netsig@tapr.org
Message-ID: <199507261747.MAA08092@ns1.texoma.com>
Rendered body type: text/plain

>Tom W2VY opines:
>> Since from your personal experience is has not worked well and other people
>> who have used it say it Can work then I suggest we continue this discussion
>> in tcp-group@ucsd.edu.
>>
>> There are more NOS experts in that mailing list than here on netsig.
>> (I have to admit many of them are here too... but it is a more suitable forum
>> for the discussion since there are people here who are not the least bit
>> interested in the specific configuration/operation of xNOS.)
>
>Good grief. There are also people here who are not the least bit
>interested in ROSE, which you relentlessly promote here at every available
>opportunity. So how about taking THAT discussion somewhere else too?
>
>Seriously, if we insist on discussion topics that each and every NETSIG
>subscriber will be interested in, then there will be nothing left to say,
>and we might as well close it down. It's easy to ignore a topic that
>doesn't interest you - just hit that 'delete' key.
>

No Barry.. we can't have such an elegant and intelligent way of dealing with
things here..

The drill seems to be to decide what you don't want to hear, then make
endless attacks and arguements, then start whining about the "noise level",
and "flaming".. (Don't mention that most of the alleged "noise" was your
own.)
The moderator will then panic and declare the subject "dead" on the SIG.

SIG HEIL !

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Internet: n5pvl@texoma.com

369. Re: Netrom configuring

From: jkbe@aloft.att.com (John_Bednar)
Date: Wed, 26 Jul 95 11:39:41 EDT
To: netsig@tapr.org
Message-ID: <9507261539.AA19957@zeus>
Rendered body type: text/plain

>>I have pleaded with Dave to implement a connection between the
>>routing quality of a node and the signal strength for some time....
>>

>Off-hand, received signal strenth seems to have a logical relation to path
>quality.........(snip)
>.....(snip)
>I don't know of any one factor that can be an all around indicator of "true"
>path quality.   Having watched the local G8BPQ mountain-top nodes running on
>XT-clones for the past few years, my sense is that in terms of simple
>understanding and ease to impliment, path quality based on link retries is a
>reasonable alternative.

I agree with Jack. Data in terms of link retries gives a better indication
of the link quality. The round trip time supplied by BPQ is also
very usefull to the sysop.

John

370. Re: [NETSIG:1751] Re: Wire vs RF.

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Wed, 26 Jul 1995 22:06:05 +0200
To: netsig@tapr.org
Message-ID: <199507262006.WAA20743@unix10.pressimage.fr>
Rendered body type: text/plain

>Hmm.
>
>pure IP ?

>No encapsulation ?

IMHO, he (sorry, don't remember who it was) was talking about TCP/IP when he
said "pure IP" (?)

And a question came to my mind (sorry if it's obvious, i'm not an expert):
When we encapsulate frames in AX25, what is encapsulated ? IP or TCP+IP ?

If we get [AX25[TCP[IP-Info]]] of course we should run "pure TCP/IP", that
is [TCP[IP-Info]].
But if encapsulations gives [AX25[IP]] the question will be to know which of
AX25 or TCP is the best in our case. (??? I'm really not sure about what i'm
writing !!)

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
       > F1JKJ@planete.net <   Public Key on mail servers
         Fidonet 2:323/27.1
         Compuserve ID 100407,436

371. Re: [NETSIG:1769] Re: TCP/IP Disadvantages

From: k5di@acca.nmsu.edu
Date: Wed, 26 Jul 95 14:26:03 GMT
To: netsig@tapr.org
Message-ID: <1003@acca.nmsu.edu>
Rendered body type: text/plain

In the message dated Wed, 26 Jul 1995 12:54:52 -0500, n5pvl writes:
>>Tom W2VY opines:
>>> Since from your personal experience is has not worked well and other people
>>> who have used it say it Can work then I suggest we continue this discussion
>>> in tcp-group@ucsd.edu.
>>>
>>> There are more NOS experts in that mailing list than here on netsig.
>>> (I have to admit many of them are here too... but it is a more suitable forum
>>> for the discussion since there are people here who are not the least bit
>>> interested in the specific configuration/operation of xNOS.)
>>
>>Good grief. There are also people here who are not the least bit
>>interested in ROSE, which you relentlessly promote here at every available
>>opportunity. So how about taking THAT discussion somewhere else too?
>>
>>Seriously, if we insist on discussion topics that each and every NETSIG
>>subscriber will be interested in, then there will be nothing left to say,
>>and we might as well close it down. It's easy to ignore a topic that
>>doesn't interest you - just hit that 'delete' key.
>>
>
>No Barry.. we can't have such an elegant and intelligent way of dealing with
>things here..
>
>The drill seems to be to decide what you don't want to hear, then make
>endless attacks and arguements, then start whining about the "noise level",
>and "flaming".. (Don't mention that most of the alleged "noise" was your
>own.)
>The moderator will then panic and declare the subject "dead" on the SIG.
>
>SIG HEIL !

        As a Jew, I resent the above. I think if you have a problem with
the moderator you should assess whether you want to continue to be a
member of this SIG. If the answer is yes then tell the moderator you are
willing to abide by his rules and do so. To do otherwise is to invite disaster
on yourself.

73, de karl k5di

m

372. Re: [NETSIG:1719] Looking for Reviewers

From: jthisdal@q.continuum.net (Jim Thisdale)
Date: Wed, 26 Jul 1995 19:01:18
To: netsig@tapr.org
Cc: jthisdal@q.continuum.net
Message-ID: <jthisdal.96.001305FF@q.continuum.net>
Rendered body type: text/plain

Hello John, I'll give the doc a good going over if you send it to me.
I've been active in tcpip for a few years now using jnos110, have tried net,

wnos, pmnos, and a few others, still running jnos. call sign n1jmm
reply here on internet... jthisdal@q.continuum.net
Jim

In article jra@ag9v.ampr.org writes:
>Received: from dingus.n5lyt.datarace.com (dingus.n5lyt.datarace.com [204.96.214.85]) by q.continuum.net
 (8.6.8/8.6.6) with ESMTP id WAA07473 for <jthisdal@q.continuum.net>; Sat, 22 Jul 1995 22:13:09 -0500
>Received: from dingus.n5lyt.datarace.com (localhost [127.0.0.1]) by dingus.n5lyt.datarace.com
(8.6.12/8.6.9) with SMTP id VAA19918; Sat, 22 Jul 1995 21:03:43 -0500
>X-UIDL: 806803120.001
>Date: Sat, 22 Jul 1995 21:03:43 -0500
>Message-Id: <199507222204.SAA23173@ag9v.ampr.org>
>Reply-To: netsig@tapr.org
>Originator: netsig@tapr.org
>Sender: netsig@tapr.org
>Precedence: bulk
>From: jra@ag9v.ampr.org
>To: netsig@tapr.org
>Subject: [NETSIG:1719] Looking for Reviewers
>X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
>X-Comment: Tucson Amateur Packet Radio Networking SIG
>Content-Length: 958
>Content-Type: text
>X-Mailer: ELM [version 2.4 PL23]

>Hi gang --

>Some of you know that about three years ago I wrote a beginner's guide to ham
>TCP/IP called "IntroNOS." I've been slowly (for the last 18 months) preparing
>an update to that document, with an eye toward having TAPR publish it in
>hardcopy.

>I now have most of the text written, and am working on organization and
>tweaking. I could use a couple of people to review the draft for me to help
>with both technical accuracy and understandability.

>Are one or two of you interested in doing a thorough review for me? I'm
>looking for folks who will actually read the doc (it's about 55 typescript
>pages at the moment) and send back significant comments within two weeks
>of receipt... There's no money in it, but a small amount of fame in the
>acknowledgements. :-)

>Let me know; I hope to be able to send out an electronic draft by the end
>of the week.

>73,
>John
>--
>John Ackermann   AG9V
>Internet: jra@ag9v.ampr.org
>Packet: AG9V@N8ACV.#DAY.OH.USA

373. Re: [NETSIG:1767] Re: TCP/IP Disadvantages

From: Barry McLarnon VE3JF <bm@hydra.carleton.ca>
Date: Wed, 26 Jul 1995 21:28:19 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507270128.VAA09729@hydra.carleton.ca>
Rendered body type: text/plain

I said:
> >Seriously, if we insist on discussion topics that each and every NETSIG
> >subscriber will be interested in, then there will be nothing left to say,
> >and we might as well close it down. It's easy to ignore a topic that
> >doesn't interest you - just hit that 'delete' key.
> >
Tom replied:
> True but in the quoted message I was trying to help Charles get a better
> answer to what he was getting from here about TCP/IP and long haul links.
>
> He did not know about tcp-group and there are very likely more people better
> equiped to answer his question there. Wouldn't you agree?

I don't know who is on these mailing lists, but I'm sure there are people
here who are knowledgeable on the topic. That's not the point. What I
took exception to was your suggestion that such a discussion be moved
from NETSIG because some people here are not interested in it. It's fine
to point out other sources of information on the net, but the existence

of more focused mailing lists on particular topics should not preclude
discussion of those topics here. This forum should provide an overview
of all options for networking packet radio stations, and that includes
controversial topics such as TCP/IP and Internet gateways (and, yes,
ROSE too :-).

Barry

--
  Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | AMPRnet: barry@va3tcp.ampr.org
  Packet Working Group | FreeNet: aa187@freenet.carleton.ca

374. Re: Wire vs RF.

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Wed, 26 Jul 1995 20:50:40 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HTC7TMOSUE96XFDU@tntech.edu>
Rendered body type: text/plain

[previous text edited]
> >pure IP ?
> >No encapsulation ?
>
> If we get [AX25[TCP[IP-Info]]] of course we should run "pure TCP/IP", that
> is [TCP[IP-Info]].
> But if encapsulations gives [AX25[IP]] the question will be to know which of
> AX25 or TCP is the best in our case. (??? I'm really not sure about what i'm
> writing !!)

What is being done now is TCP inside of IP inside of AX25 UI frames.
Actually we can ignore the TCP part and just talk about how we are going to
send IP frames; TCP is only one of several protocols that IP can carry.

Some people have suggested sending IP directly, using the IP address as the
hardware address. This is not a good idea, IMHO. One immediately evident
problem is with multi-port systems: each network port needs a separate
address but with a single IP address this is not possible. Other factors
to consider are mobile systems, routing, security, and address assignment
mechanisms.

The various IPng groups have studied many of these issues and I'm sure that
we could benefit from their work. In fact, we're really a good testbed for
some of the proposed solutions, especially those concerning mobile systems
where the addressing, routing and link reliability problems are most
important.

Jeff, k9ja
+-+
Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
(615) 372-3485 | Cookeville Tennessee 38505   U.S.A.

375. Re: [NETSIG:1772] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 26 Jul 1995 21:18:15 -0500
To: netsig@tapr.org
Message-ID: <199507270218.VAA24445@ns1.texoma.com>
Rendered body type: text/plain

>In the message dated Wed, 26 Jul 1995 12:54:52 -0500, n5pvl writes:
>>>Tom W2VY opines:
>>>> Since from your personal experience is has not worked well and other people
>>>> who have used it say it Can work then I suggest we continue this discussion
>>>> in tcp-group@ucsd.edu.
>>>>
>>>> There are more NOS experts in that mailing list than here on netsig.
>>>> (I have to admit many of them are here too... but it is a more suitable
forum
>>>> for the discussion since there are people here who are not the least bit
>>>> interested in the specific configuration/operation of xNOS.)
>>>
>>>Good grief. There are also people here who are not the least bit
>>>interested in ROSE, which you relentlessly promote here at every available
>>>opportunity. So how about taking THAT discussion somewhere else too?
>>>
>>>Seriously, if we insist on discussion topics that each and every NETSIG
>>>subscriber will be interested in, then there will be nothing left to say,
>>>and we might as well close it down. It's easy to ignore a topic that

>>>doesn't interest you - just hit that 'delete' key.
>>>
>>
>>No Barry.. we can't have such an elegant and intelligent way of dealing with
>>things here..
>>
>>The drill seems to be to decide what you don't want to hear, then make
>>endless attacks and arguements, then start whining about the "noise level",
>>and "flaming".. (Don't mention that most of the alleged "noise" was your
>>own.)
>>The moderator will then panic and declare the subject "dead" on the SIG.
>>
>>SIG HEIL !
>
>   As a Jew, I resent the above. I think if you have a problem with
>the moderator you should assess whether you want to continue to be a
>member of this SIG. If the answer is yes then tell the moderator you are
>willing to abide by his rules and do so. To do otherwise is to invite disaster
>on yourself.
>

Thanks for illustrating my point, Karl. That was exactly the type of
behavior I was referring to.
(An obvious attempt to stampede the moderator.)
Personally, I don't see a religious connection there. If you do, that's your
hangup, not mine. In any case, dragging religion into the issue is kind of
'low rent", pardner..

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Internet: n5pvl@texoma.com

376. Re: [NETSIG:1776] Re: TCP/IP Disadvantages

From: Andrew Funk <kb7uv@panix.com>
Date: Wed, 26 Jul 1995 23:05:14 -0400
To: netsig@tapr.org
Message-ID: <199507270305.XAA16860@panix3.panix.com>
Rendered body type: text/plain

At 09:26 PM 7/26/95 -0500, n5pvl@texoma.com (Charles Brabham)wrote, quoting
Karl, k5di@acca.nmsu.edu:

>>In the message dated Wed, 26 Jul 1995 12:54:52 -0500, n5pvl writes:
>>>SIG HEIL !
>>
>>   As a Jew, I resent the above. I think if you have a problem with
>>the moderator you should assess whether you want to continue to be a
>>member of this SIG. If the answer is yes then tell the moderator you are
>>willing to abide by his rules and do so. To do otherwise is to invite disaster
>>on yourself.
>>
>
>Thanks for illustrating my point, Karl. That was exactly the type of
>behavior I was referring to.
>(An obvious attempt to stampede the moderator.)
>Personally, I don't see a religious connection there. If you do, that's your
>hangup, not mine. In any case, dragging religion into the issue is kind of
>'low rent", pardner..

Perhaps you are not familiar with the connotation, both historical (NAZI
regime) and current ("skinheads", fascists, "generic" anti-semites, etc.) of
"SIG HEIL!"

If you are, you know quite well why Karl reacted as he did. While I did not
post a message to register my disgust, my reaction was similar.

Others may disagree, but I feel you owe the members of this list an apology.

--
  _____________________ Andrew Funk, KB7UV _____________________________
 | Tech Producer/Editor   Internet: kb7uv@panix.com |
 | WCBS-TV Channel 2 News   http://www.webcom.com/~arfunk/ |
 | New York, NY USA   Writing for my self, not my employer! |

377. Re: [NETSIG:1776] Re: TCP/IP Disadvantages

From: shawnpat@sierra.net (Shawn Skinner)
Date: Thu, 27 Jul 1995 03:22:40 -0700
To: netsig@tapr.org
Message-ID: <199507270326.AA01557@diamond.sierra.net>
Rendered body type: text/plain

>>In the message dated Wed, 26 Jul 1995 12:54:52 -0500, n5pvl writes:
>>>>Tom W2VY opines:

SNIP
SNIP
SNIP

>
>73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>
>Internet: n5pvl@texoma.com
>

PLEASE, PLEASE, take the arguments off to DIRECT E-MAIL.

Thou I am not one, there are folks who are on AOL who pay money
for each and every one of these non-topical posts.

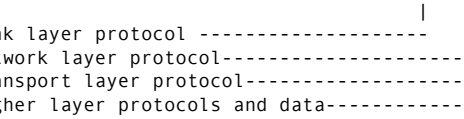
de Shawn.
shawnpat@sierra.net Shawn Skinner

378. Re: [NETSIG:1771] Re: Wire vs RF.

From: mwestfal@blaze.csci.csusb.edu (Michael Westfall)
Date: Wed, 26 Jul 1995 21:54:14 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <9507270454.AA20467@blaze.csci.csusb.edu>
Rendered body type: text/plain

> If we get [AX25[TCP[IP-Info]]] of course we should run "pure TCP/IP", that
> is [TCP[IP-Info]].
> But if encapsulations gives [AX25[IP]] the question will be to know which of
> AX25 or TCP is the best in our case. (??? I'm really not sure about what i'm
> writing !!)

Actually the encapsulation order is [AX25[IP[TCP[Data]]]



Mike, N6KUY

mwestfal@csci.csusb.edu

379. Re: [NETSIG:1777] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 27 Jul 1995 01:09:15 -0500
To: netsig@tapr.org
Message-ID: <199507270609.BAA13149@ns1.texoma.com>
Rendered body type: text/plain

>At 09:26 PM 7/26/95 -0500, n5pvl@texoma.com (Charles Brabham)wrote, quoting
>Karl, k5di@acca.nmsu.edu:
>
>
>>>In the message dated Wed, 26 Jul 1995 12:54:52 -0500, n5pvl writes:
>>>>SIG HEIL !
>>>
>>>   As a Jew, I resent the above. I think if you have a problem with
>>>the moderator you should assess whether you want to continue to be a
>>>member of this SIG. If the answer is yes then tell the moderator you are
>>>willing to abide by his rules and do so. To do otherwise is to invite
disaster
>>>on yourself.
>>>
>>
>>Thanks for illustrating my point, Karl. That was exactly the type of
>>behavior I was referring to.
>>(An obvious attempt to stampede the moderator.)
>>Personally, I don't see a religious connection there. If you do, that's your
>>hangup, not mine. In any case, dragging religion into the issue is kind of

>>'low rent", pardner..
>
>Perhaps you are not familiar with the connotation, both historical (NAZI
>regime) and current ("skinheads", fascists, "generic" anti-semites, etc.) of
>"SIG HEIL!"
>
>If you are, you know quite well why Karl reacted as he did. While I did not
>post a message to register my disgust, my reaction was similar.
>
>Others may disagree, but I feel you owe the members of this list an apology.
>

You are confused. The phrase you and Karl have in mind is Sieg Heil..
I made a disparaging reference to the mindset which would try to silence
opposing opinions through underhanded methods; Specificly through attempts
to "prove you're right" by being the one to shout the loudest. - Being the
"squeeky wheel".. Get the picture?
Think it through.

SIG (As in Special Interest Group)

While I find it embarrasing to have to explain something so obvious to other
adults, I see no need to apologize to you, Karl, or anyone else.

My remark DESPARAGED such fascist attitudes.   The point still stands.

Get it this time around?

I HOPE this will be the last of this sort of whining. It has no place here.
It's "off topic" to go on forever, belaboring a misconception.

Historical note: My family had something to do with the freedom which
people in Europe now enjoy. Two members of my family paid "in full".
I have personally made it a point to make things hot for several
anti-semites I have encountered, and will continue to do so. Sometimes it
has cost me, but I've always managed to see to it that it cost them much more.

Is this sinking in, by any chance? Should I elaborate?

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Internet: n5pvl@texoma.com

380. RE: [NETSIG:1770] Re: Netrom configuring

From: roberts@ses6a.bt.co.uk
Date: Thu, 27 Jul 1995 09:19:32 +0100
To: netsig@tapr.org
Message-ID: <199507270827.DAA27486@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sorry Jack, John et al.

I'm not ignoring this - I'm trying to get my thoughts
sorted out for the next version.

Has anyone tried to model a network with the dynamic changes
suggested ? I'd be interested.

Jack, I have modded the code fragment for the next version
to include the percentage link retries in the Mheard list.
I'm not sure it is worth it for the L4Mheard list though. It
is not applicable to the L3Mheard list, so it is just in L2
currently.

Dave

381. Re: [NETSIG:1774] Re: TCP/IP Disadvantages

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 27 Jul 95 07:30:34 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c73@ram.net>
Rendered body type: text/plain

Barry said:

>I don't know who is on these mailing lists, but I'm sure there are people
>here who are knowledgeable on the topic. That's not the point. What I
>took exception to was your suggestion that such a discussion be moved

>from NETSIG because some people here are not interested in it. It's fine
>to point out other sources of information on the net, but the existence
>of more focused mailing lists on particular topics should not preclude
>discussion of those topics here. This forum should provide an overview
>of all options for networking packet radio stations, and that includes
>controversial topics such as TCP/IP and Internet gateways (and, yes,
>ROSE too :-).

I think if you review the previous messages from the archives you will see
that there were specific messages indicating that each point of view on how
well tcp/ip worked over long haul networks had been fully expressed and that
more than a few people were tired of the thread. I just tried to tie the
ribbons on it here with a suggestion of where more detailed information could
be sought.

If you would like to continue this I will be happy to discuss it via PRIVATE
EMAIL as I am sure others are tired of this as well... :]

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

382. NetSIG to be moderated

From: jra@ag9v.ampr.org
Date: Thu, 27 Jul 1995 08:08:10 -0400 (EDT)
To: netsig@tapr.org
Cc: gjones@tenet.edu (Greg Jones), tapr-sys@tapr.org
Message-ID: <199507271208.IAA04342@ag9v.ampr.org>
Rendered body type: text/plain

Effective as soon as the mechanics can be put in place, NetSIG will become a
moderated list.

The rules are simple. A moderator (one or two people will help me to
share the load and reduce delays if I'm unavailable) will review messages
submitted to the list. If a message is:

1. Germane to the charter of the list,
2. Devoid of personal attack,
3. Not offensive to a reasonable person, and
4. Not beating a dead horse

it will be passed on to the list. The moderator will not edit the content
of messages in any way. The moderator's decision is final.

This will slow down the message throughput, but that's the unavoidable result
of our seeming inability to carry on a reasonable discussion.

You Were Warned.

John   AG9V
NetSIG Moderator
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

383. Re: [NETSIG:1783] NetSIG to be moderated

From: "Brian A. Lantz" <brian@lantz.com>
Date: Thu, 27 Jul 1995 08:56:56 +0100
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507270834.U189-0100000@lantz.com>
Rendered body type: text/plain

On Thu, 27 Jul 1995 jra@ag9v.ampr.org wrote:

> Effective as soon as the mechanics can be put in place, NetSIG will become a
> moderated list.

Bravo!!!

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
```

```
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

384. Re: [NETSIG:1782] Re: TCP/IP Disadvantages

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 27 Jul 1995 07:56:18 -0500
To: netsig@tapr.org
Message-ID: <199507271256.HAA24488@ns1.texoma.com>
Rendered body type: text/plain

According to Barry..
>
>I don't know who is on these mailing lists, but I'm sure there are people
>here who are knowledgeable on the topic. That's not the point. What I
>took exception to was your suggestion that such a discussion be moved
>from NETSIG because some people here are not interested in it. It's fine
>to point out other sources of information on the net, but the existence
>of more focused mailing lists on particular topics should not preclude
>discussion of those topics here. This forum should provide an overview
>of all options for networking packet radio stations, and that includes
>controversial topics such as TCP/IP and Internet gateways (and, yes,
>ROSE too :-).
>

I didn't take Tom's suggestion in that way, myself.. It seemed a friendly
gesture to me.

I went ahead and subscribed to the TCP group, but never intended to avoid
discussing TCP/IP here because of it. I'm no mind reader, but I seriously
doubt that Tom was under that impression either. If he was, he was wrong.
I agree that this is of course should be the place where all networking
issues can be discussed, including the controversial ones. Whether it will
actually turn out to be that way is still in question.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Internet: n5pvl@texoma.com

385. Re: [NETSIG:1783] NetSIG to be moderated

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Thu, 27 Jul 1995 08:41:11 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HTCX3LPWNU96XFH2@tntech.edu>
Rendered body type: text/plain

> Effective as soon as the mechanics can be put in place, NetSIG will become a
> moderated list.

Great. Once again, a few irresponsible people ruin it for everybody.
That's two SIGs, what's next?

Suggestion to the soon-to-be moderator: Is it possible for selective
moderation (by user)?

Jeff, k9ja
+-+
Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
(615) 372-3485 | Cookeville Tennessee 38505   U.S.A.

386. Re: NetSIG to be moderated

From: match@ee.utah.edu (Marvin Match)
Date: Thu, 27 Jul 1995 10:03:23 -0600
To: netsig@tapr.org
Message-ID: <199507271603.AA200961003@ee.utah.edu>
Rendered body type: text/plain

>Effective as soon as the mechanics can be put in place, NetSIG will become a
>moderated list.
>
Well, I think it's about time.

I don't have time to read through argument after argument. Or to listen to
people
bashing each other about "what you said vs what I said" or "go to some other
group".

Most of the NeTSIG postings go into my kill file at this point.

I wish the moderator(s) luck. I don't envy them. I'd much prefer a summary, even.

Marvin

387. Re: [NETSIG:1786] Re: NetSIG to be moderated

From: hannibal.wncc.cc.ne.us@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. - AG0N)
Date: Thu, 27 Jul 1995 16:05:29 +0000
To: netsig@tapr.org
Message-ID: <9507271605.AA25035@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

>> Effective as soon as the mechanics can be put in place, NetSIG will become a
>> moderated list.
>
>Great. Once again, a few irresponsible people ruin it for everybody.
>That's two SIGs, what's next?

Ruin? How so? It should make it much better than it has been of late.
Seems the only way to do things with all the overly sensitive people that
have surfaced lately taking everything as a personal hit on them. I say
Bravo! Let the mature people post and the rest blubber to themselves. We
can get all the bickering and petty squabbles in the regular newsgroups.
Let's return the listservs to useful discussion.

One thing no one keeps in mind anymore... It's not a crime to disagree with
someone. Differing opinions don't mean either person is right or wrong,
good or bad. Why all the "til the death" arguing? Debate the topic
intelligently and be done with it!

I'll be disappointed, but will understand, if this is "moderated out" and
doesn't make the list.
..
..
Gary McDuffie, Sr. - AG0N
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM

388. Re: [NETSIG:1782] Re: TCP/IP Disadvantages

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 27 Jul 95 09:28:50 PDT
To: netsig@tapr.org
Message-ID: <9507270928.ZM16859@hanko>
Rendered body type: text/plain

On Jul 27, 6:34am, Tom Moulton wrote:
> Subject: [NETSIG:1782] Re: TCP/IP Disadvantages
> Barry said:
>
> >I don't know who is on these mailing lists, but I'm sure there are people
> >here who are knowledgeable on the topic. That's not the point. What I
> >took exception to was your suggestion that such a discussion be moved
> >from NETSIG because some people here are not interested in it. It's fine
> >to point out other sources of information on the net, but the existence
> >of more focused mailing lists on particular topics should not preclude
> >discussion of those topics here. This forum should provide an overview
> >of all options for networking packet radio stations, and that includes
> >controversial topics such as TCP/IP and Internet gateways (and, yes,
> >ROSE too :-).
>
> I think if you review the previous messages from the archives you will see
> that there were specific messages indicating that each point of view on how
> well tcp/ip worked over long haul networks had been fully expressed and that
> more than a few people were tired of the thread. I just tried to tie the
> ribbons on it here with a suggestion of where more detailed information could
> be sought.
>
> If you would like to continue this I will be happy to discuss it via PRIVATE
> EMAIL as I am sure others are tired of this as well... :]

I for one am NOT tired of ANY discussion of networking issues, whether
those issues be technical, organizational, or political.

Without free and open discussion of ALL the issues, this group will be
useless to me: I'm not the least bit interested in some "party line"
or "politically correct" discussion; I want to hear everything that

anyone might have to say.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

389. Re: [NETSIG:1783] NetSIG to be moderated

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 27 Jul 95 09:29:48 PDT
To: netsig@tapr.org
Message-ID: <9507270929.ZM16864@hanko>
Rendered body type: text/plain

On Jul 27, 7:21am, jra@ag9v.ampr.org wrote:
> Subject: [NETSIG:1783] NetSIG to be moderated
> Effective as soon as the mechanics can be put in place, NetSIG will become a
> moderated list.
>
> The rules are simple. A moderator (one or two people will help me to
> share the load and reduce delays if I'm unavailable) will review messages
> submitted to the list. If a message is:
>
> 1. Germane to the charter of the list,
> 2. Devoid of personal attack,
> 3. Not offensive to a reasonable person, and
> 4. Not beating a dead horse
>
> it will be passed on to the list. The moderator will not edit the content
> of messages in any way. The moderator's decision is final.
>
> This will slow down the message throughput, but that's the unavoidable result
> of our seeming inability to carry on a reasonable discussion.
>
> You Were Warned.

If indeed this group becomes moderated, you may unsubscibe me.

See my previous post.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

390. Re: [NETSIG:1790] Re: NetSIG to be moderated

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 27 Jul 95 13:04:51 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c7b@ram.net>
Rendered body type: text/plain

While I agree that a moderated list is much less dynamic (largely due to the
propagation delay) I see why the movement in that direction.

Here is a suggestion, which places more responsibility upon the moderator,
but less than a fully moderated list.

Moderator will ACTIVELY provide feedback via DIRECT EMAIL to tell people to
shut up when required.

You could extend that to include unsubscibing people who don't listen and
possibly deactivating the automatic subscribe/unsubscribe feature and have
that manually moderated (ie moderate subscribe)

Thoughts?

```
_____________________________________
Thomas A. Moulton, W2VY     RAM Mobile Data
w2vy@ram.net                (908) 602-5227
```

391. Re: [NETSIG:1791] Re: NetSIG to be moderated

From: Steve Stroh <strohs@halcyon.com>
Date: Thu, 27 Jul 1995 10:44:44 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.950727103259.9284B-100000@chinook.halcyon.com>
Rendered body type: text/plain

On Thu, 27 Jul 1995, Tom Moulton wrote:

> While I agree that a moderated list is much less dynamic (largely due to the
> propagation delay) I see why the movement in that direction.

Dynamic... you're probably right. The nature of this list is such that
few of us would be able to justify the moderation duties "interactively"-
be logged in full time and approving/dissaproving/commenting in something
like real time.

On the other hand, my hope would be that some lapsed subscribers might
return, attracted by an increased S/N ratio, and thus ADD to the richness
of discussion.

> Here is a suggestion, which places more responsibility upon the moderator,
> but less than a fully moderated list.
>
> Moderator will ACTIVELY provide feedback via DIRECT EMAIL to tell people to
> shut up when required.

I'm skeptical of that approach working, given the personalities of those
that are causing most of the problem, but it's probably worth a try.

> You could extend that to include unsubscibing people who don't listen and
> possibly deactivating the automatic subscribe/unsubscribe feature and have
> that manually moderated (ie moderate subscribe)

Some listservers can do this- Majordomo for one, not sure about Listserv.
I think that's a promising approach. Majordomo can pass the
approve/dissaprove subscriptions along to the moderator.

> Thoughts?

Good point of discussion, Tom.

> _____________________________________
> Thomas A. Moulton, W2VY   RAM Mobile Data
> w2vy@ram.net   (908) 602-5227

Steve N8GNJ

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

392. Re: [NETSIG:1791] Re: NetSIG to be moderated

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Thu, 27 Jul 1995 10:51:00 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507271801.NAA00241@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

I agree with Tom.

73 de Jack

At 12:21 PM 7/27/95 -0500, Tom Moulton wrote:
>While I agree that a moderated list is much less dynamic (largely due to the
>propagation delay) I see why the movement in that direction.
>
>Here is a suggestion, which places more responsibility upon the moderator,
>but less than a fully moderated list.
>
>Moderator will ACTIVELY provide feedback via DIRECT EMAIL to tell people to
>shut up when required.
>

>You could extend that to include unsubscibing people who don't listen and
>possibly deactivating the automatic subscribe/unsubscribe feature and have
>that manually moderated (ie moderate subscribe)
>
>Thoughts?
>
>_____
>Thomas A. Moulton, W2VY   RAM Mobile Data
>w2vy@ram.net   (908) 602-5227
>
>

393. Re: [NETSIG:1789] Re: TCP/IP Disadvantages

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 27 Jul 95 14:17:44 UTC
To: netsig@tapr.org
Message-ID: <2188@paccomm.com>
Rendered body type: text/plain

what is that old tune:

It ain't what you say, its the way that you say it;
It ain't what you do, its the way that you do it....

I detest political correctness too, but sure could tolerate a lower level
of acrimony. I have other sources of stress, don't need it here.

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

394. Networking Subgroups

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 27 Jul 1995 12:27:20 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950727115903.862A-100000@acca>
Rendered body type: text/plain

It seems to me that discussions about networks that cover over 100
miles are much different than talking about networks that cover less than
100 miles. So I suggest that we have 2 verbs that define which kind of
network we are discussing.

        For instance we can use short and long networks. A good example
is the 9600 baud link between El Paso TX and Las Cruces, NM that is 40
miles long. This is a short network. Or the HF PBBS system that Hank
talks about is a long network.

        My suggestion is that every message to this SIG state the kind of
network they are discussing, short or long. This will help to seperate
the network discussions into 2 groups. Readers that are concerned with
"wiring" a city like Los Angeles can skip the messages identified as Long.
And another reader trying to connect 2 towns 300 miles away can skip
those messages called Short.

        In my experiance some of the threads that have caused problems
are ones where a network designed to be short is debated as a long
network by others. A good example is the 900 MHz spread spectrum data
links. They are good for about 5 miles. This might be far enough for a
city application, but it's impractical for a long network (a fact pointed
out many times).

        Please let me know what you think about this. I think it's a good
idea, of course...

73, de karl k5di

395. Re: [NETSIG:1791] Re: NetSIG to be moderated

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 27 Jul 1995 12:31:40 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950727123000.862B-100000@acca>
Rendered body type: text/plain

On Thu, 27 Jul 1995, Tom Moulton wrote:

        I agree with Tom. We use this method on the Fido Net and it seems
to work fine.

73, karl k5di

> While I agree that a moderated list is much less dynamic (largely due to the
> propagation delay) I see why the movement in that direction.
>
> Here is a suggestion, which places more responsibility upon the moderator,
> but less than a fully moderated list.
>
> Moderator will ACTIVELY provide feedback via DIRECT EMAIL to tell people to
> shut up when required.
>
> You could extend that to include unsubscibing people who don't listen and
> possibly deactivating the automatic subscribe/unsubscribe feature and have
> that manually moderated (ie moderate subscribe)
>
> Thoughts?
>
> _____________________________________
> Thomas A. Moulton, W2VY   RAM Mobile Data
> w2vy@ram.net   (908) 602-5227
>
>

396. Re: [NETSIG:1781] Re: Netrom configuring

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Thu, 27 Jul 1995 11:23:42 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199507271835.NAA00576@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

At 03:33 AM 7/27/95 -0500, roberts@ses6a.bt.co.uk wrote:

<snip>
>
>Has anyone tried to model a network with the dynamic changes
>suggested ? I'd be interested.
>

I haven't heard of any, unless it's been done with the mobile IP group.
If you can find room for coding, suspect the effort will be well worth it
from the standpoint of lessons learned, even if it turns out to not be
satisfactory for some reason. I also think l2 retries are all that's sufficient

>Jack, I have modded the code fragment for the next version
>to include the percentage link retries in the Mheard list.
>I'm not sure it is worth it for the L4Mheard list though. It
>is not applicable to the L3Mheard list, so it is just in L2
>currently.
>
>Dave
>
>

397. Re: [NETSIG:1781] Re: Netrom configuring

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 27 Jul 1995 13:06:57 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950727125538.862C-100000@acca>
Rendered body type: text/plain

On Thu, 27 Jul 1995 roberts@ses6a.bt.co.uk wrote:

> Sorry Jack, John et al.
>
        Dave, I learned that the FCC here in the USA has removed the part
of the ham rules that requires every packet to be inside a AX.25 packet.
I am not at all sure, but doesn't your X1J IP router also put the IP
packet inside a AX.25 packet?

        Of course I now wonder if your node could be configured to pass a
IP packet that is not inside a AX.25 packet...but maintain the current

netrom node like you have now. This would remove some redundancy in the
way NOS uses Netrom now. Also it should allow IP packets to go from node
to node much as the AX.25 do now.

73, de karl k5di

398. Re: [NETSIG:1783] NetSIG to be moderated

From: Bruce Perens <bruce@Pixar.com>
Date: Thu, 27 Jul 1995 12:48:16 -0700
To: netsig@tapr.org
Cc: bruce@Pixar.com
Message-ID: <m0sbYun-000BgCC@mongo.pixar.com>
Rendered body type: text/plain

I'm not interested in participating in a moderated list. Bye!

    Bruce

--
-- Attention Ham Radio Operators: For information on "Linux for Hams", read
-- the World Wide Web page http://www.hams.com/perens/LinuxForHams, or send
-- an e-mail message containing the word "help" to info@hams.com .

399. Meta: Networking Subgroups

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 27 Jul 95 13:59:57 PDT
To: netsig@tapr.org
Message-ID: <9507271359.ZM17263@hanko>
Rendered body type: text/plain

On Jul 27, 1:45pm, Karl F. Larsen wrote:
> Subject: [NETSIG:1795] Networking Subgroups
>
>   It seems to me that discussions about networks that cover over 100
> miles are much different than talking about networks that cover less than
> 100 miles. So I suggest that we have 2 verbs that define which kind of
> network we are discussing.
>
>   For instance we can use short and long networks. A good example
> is the 9600 baud link between El Paso TX and Las Cruces, NM that is 40
> miles long. This is a short network. Or the HF PBBS system that Hank
> talks about is a long network.
>
>   My suggestion is that every message to this SIG state the kind of
> network they are discussing, short or long. This will help to seperate
> the network discussions into 2 groups. Readers that are concerned with
> "wiring" a city like Los Angeles can skip the messages identified as Long.
> And another reader trying to connect 2 towns 300 miles away can skip
> those messages called Short.
>
>   In my experiance some of the threads that have caused problems
> are ones where a network designed to be short is debated as a long
> network by others. A good example is the 900 MHz spread spectrum data
> links. They are good for about 5 miles. This might be far enough for a
> city application, but it's impractical for a long network (a fact pointed
> out many times).

I think this is an excellent idea. We might also tag these meta-discussions,
to those uninterested in policy can avoid them.

Seems like we have an issue here similar to one being discussed on the
bbs group: how to tag messages to those who are uninterested and those
who might be offended can avoid reading them.

The 100 mile path length seems about right: we certainly see the difference
in issues in the PNW network.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

400. poll of last netsig digest

From: rishmael@halnet.com (Rex H. Ishmael)
Date: Thu, 27 Jul 1995 17:13:38 -0500
To: netsig@tapr.org
Message-ID: <199507272212.AA44883@interlock.halnet.com>
Rendered body type: text/plain

I had to do this... acutally I had few moments of time and the
thought came to me what is the "meat" in what this thing puts out?
so I did (IMHO) a tally of the last NETSIG digest I recieved...
17 notes were in it and the went like this:

1. A question
2. An answer to the above.
3. positive information on networking stuff..(for me)
4. ATTACK OF COMMENTS, OR ???? (NO VALUE)
5. RESPONSE TO AN ATTACK (NO VALUE)
6. RETURN COMMENT ON ATTACK (NO VALUE)
7. Positive info (for me)
8. Positive info (")
9. RETURN ATTACK (NO VALUE)
10. SHOULD HAVE BEEN PERSONAL MAIL (NO VALUE)
11. RETRACTION TO RETURN FOR ATTACK OF RETURN OF (NO VALUE)
12. Positive info (no fully understood, but working on it)
13. RETURN ATTACK (NO VALUE)
14. RETURN ATTACK (NO VALUE)
15. REQUEST FOR CALM FROM THE ATTACK COUNTER ATTACK (NO VALUE)
16. Positive info (acutally clearing some above positives)
17. RETURN COUTNER ATTACK (NO VALUE)

Lets calculate 10 of 17 were of no value.
We are to be conversing on how we can improve networking in the amatuer relm,
that indicates that we (amatuer networking) loose, and those that aspire
to keep things in limbo, have won! or is the vote too quick?
Since I have not been on here but for 8 months, can anyone answer the following
that I may be better informed:
1. What case studies have been collected other than ATTACK/COUNTER ATTACK?
2. Are we all truely interested in networking or are we looking for
   open forum to spout personal beliefs not open for meaningful discussion?
3. I think there was limited flickers of light on linking regional networks,but
   so far all have died from ATTACK/COUNTER ATTACK.?
4. ATTACK/COUNTER ATTACK any role of packet<-->internet gateways.
   (guess I was hoping to see some positive approach, that never reveiled
   (itself?)
5. Did every other networking topic lead to ATTACK/COUNTER ATTACK?

NOTICE: ALL OF THE HUMBLE OPINIONS ABOVE ARE MY OWN, HOWEVER INSANE.
THEY HAVE BEEN CAUSED BY THE READING OF THIS SIG.

==
Rex Ishmael, Environmental Engineer, Halliburton Energy Services
E-Mail:rishmael@halnet.com
Amatuer Mail: WD0AJG@WD0AJG.#SCOK.OK.USA.NOAM
==

401. Re: [NETSIG:1799] Re: NetSIG

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Thu, 27 Jul 1995 19:28:39 -0300
To: netsig@tapr.org
Message-ID: <199507272228.TAA04007@bud.peinet.pe.ca>
Rendered body type: text/plain

>I'm not interested in participating in a moderated list. Bye!
>
I'm sorry for those who feel ANY control on a List is a bad thing.
I appreciate , and sometimes enjoy reading all (reasonable) discussions
about Packet Networking and usually respect opinions I may not agree
with.
However, there are some on here who wish to keep pounding away with
their own views until the QRM is nothing more than flames.
That I can do without.

Here's an idea, instead of blocking bad mail, just change its Subject
field to "FLAME" or some other flag subject so those of us who dont care
to see personal attacks or soapboxing can hit the Kill button before
reading them..just like I do when scanning NewsGroups.

73 - Ron ve1aic

402. Re: [NETSIG:1795] Networking Subgroups

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 27 Jul 1995 17:31:00 -0500
To: netsig@tapr.org
Message-ID: <199507272231.RAA11690@ns1.texoma.com>
Rendered body type: text/plain

>
>   It seems to me that discussions about networks that cover over 100
>miles are much different than talking about networks that cover less than
>100 miles. So I suggest that we have 2 verbs that define which kind of
>network we are discussing.
>
>   For instance we can use short and long networks. A good example
>is the 9600 baud link between El Paso TX and Las Cruces, NM that is 40
>miles long. This is a short network. Or the HF PBBS system that Hank
>talks about is a long network.
>
>   My suggestion is that every message to this SIG state the kind of
>network they are discussing, short or long. This will help to seperate
>the network discussions into 2 groups. Readers that are concerned with
>"wiring" a city like Los Angeles can skip the messages identified as Long.
>And another reader trying to connect 2 towns 300 miles away can skip
>those messages called Short.
>
>   In my experiance some of the threads that have caused problems
>are ones where a network designed to be short is debated as a long
>network by others. A good example is the 900 MHz spread spectrum data
>links. They are good for about 5 miles. This might be far enough for a
>city application, but it's impractical for a long network (a fact pointed
>out many times).
>
>   Please let me know what you think about this. I think it's a good
>idea, of course...
>
>73, de karl k5di
>

One thing is for sure.. Typing LONG NETWORK is a lot easier on the fingers
that the term LONG-HAUL NETWORK which I have used previously.

As long as everyone knows what's meant, that's good enough for me.

On the BBSSIG, Barry is looking for mechanisms for the members of that SIG
to use, in order to arrive at usable conclusions.. A mechanism here for
agreeing on terms would be good too.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Internet: n5pvl@texoma.com

403. Re: [NETSIG:1783] NetSIG to be moderated

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 27 Jul 1995 17:31:06 -0500
To: netsig@tapr.org
Message-ID: <199507272231.RAA11693@ns1.texoma.com>
Rendered body type: text/plain

>
Shades of "political correctness!"

Sometimes folks feel tempted to go for these deals, when they happen to
support THIER POLITICS of the moment. Later on, when they get "bit" by these
same mechanisms, they can only blame themselves for being silly and
shortsighted enough to go along with it in the first place.

Censorship can be called "moderation", or any other number of things.. It's
still censorship, any way you look at it.

If I was running this or any other SIG, I would guard the SIG's validity by
not allowing a vocal group of whiners to undercut the SIG's purpose by the
act of catering to thier complaints. I would allow every participant's
postings stand on thier own merit, or lack thereof. (With the exception of
nasty language, which I would deal with personally.)
But in this case, it's TAPR's lookout, not mine. If TAPR wants it's SIGS to
become a coffee klatch for whiners and bullies, it's heading in the right

direction.
If TAPR wants it's SIGs to have any widely recognized validity as a place to
honestly express opinions, discuss issues, and get things accomplished, it's
heading the wrong direction.

On the packet network and internet, censors are routinely "routed around"
and ignored. It serves them right.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM

Internet: n5pvl@texoma.com

404. Meteor Shower 2m EVENT! (fwd)

From: Dave Wolf <wo5h>
Date: Thu, 27 Jul 1995 18:51:17 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199507272351.SAA04204@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Here's a post on amsat -bb that should be of interest to some who
want to experiment with meteor scatter:

Forwarded message: > From
listmaint@AMSAT.Org
Thu Jul 27 18:30:29 1995 > Date: Thu, 27 Jul 1995 13:34:02 -0400 (EDT)
> From: Bob Bruninga <bruninga@greatlakes.nadn.navy.mil>
> To: amsat-bb@AMSAT.Org
> Subject: Meteor Shower 2m EVENT!
> Message-Id: <Pine.SUN.3.91.950727133053.21752J-100000@greatlakes.nadn.navy.mil>
> Mime-Version: 1.0
> Content-Type: TEXT/PLAIN; charset=US-ASCII
>
> In order to get the maximum number of transmitters and listeners on the
> air, we need to get the following announcement out to all interested
> packeteers:
> ----------------------------CUT HERE---------------------------------
> NATIONWIDE 2 METER METEOR SHOWER TEST 11-15 AUGUST
>
> The August QST Packet Perspective column by Stan Horzepa pondered
> a plan to test 2 meteor scatter. LETS DO IT! Amateurs Nationwide
> are hereby encouraged to participate in the Persieds Meteor
> Shower which will peak on 13 Aug. Although 6 meters is far better
> than 2 meters for meteor scatter work, everyone has a 2 meter radio and
> we can make up in numbers what is lacking in performance. All
> you need is a TNC, and preferably high power and a beam. The objective is
> to see how many grid square (DX) packets you receive over the 4 day event.
>
> Here is the plan: Stations in the four quadrants of the country will
> alternately transmit for 15 seconds. Stations will transmit the
> shortest possible meaningful packet formed by placing their 6 digit
> gridsquare in the UNPROTO TO callsign field. eg, W3ADO>FM18SX: The
> suggested frequency is the ARRL experimental packet frequency of 145.79.
> BE SURE THIS FREQUENCY IS NOT OTHERWISE ASSIGNED IN YOUR AREA. EVEN so,
> you can still monitor!
>
> STEP-BY-STEP SET UP PROCEDURES:
>
> 1) Point your beam towards a major population area about 500 to 1000 miles
>   away in one of the three other USA quadrants. If there is another 2m
>   local station, coordinate your beam headings so that you are not both
>   hitting the same azimuth and receiver target area.
> 2) Enter your grid square into your TNC using the following command:
>   cmd: UNPROTO FM18SX
>   (If you cannot estimate the last 2 digits, use AA)
>   Notice that there is NO VIA DIGIPEATER used!
> 3) ATTENDED OPERATION: Enter the converse mode (cmd: CONV) and
>   then each time you hit your carriage return key, you will send a packet.
>   Hit 20 CR's and you will send a bundle of 20 grid square packets.
>   Synchronize your clock with WWV and transmit as many CR's you can in
>   the following schedule:
>   North East stations transmit between 00 to 14 seconds
>   South East ...   15 to 29 seconds
>   South West ...   30 to 44 seconds
>   North West ...   45 to 59 seconds
>
> 4) UNATTENDED OPERATION: This will probably be the most successful:
>   a) Set your BEACON TEXT to ^HP where H and P are single characters:
>   H is beam heading divided by 10 and expressed by the digits 0 to 9

> and then A through Z. 9=90, A=100, B=110, C=120... Z=350
> P is the square root of your power %10. 1=10, 2=40, 3=90... 9=810
> b) Set your BEACON to EVERY 1. This is not in accordance with the
> scheduled 15 second cycle, but it is better than nothing if you are
> operating un-attended.
>
> 5) Alternatively, run the APRS program version 71b or later, which has an
> automated mode for Meteor Scatter and will plot all received packets on
> the map. Also, in many areas, 145.79 is already being used for APRS.
> Read the APRS METEOR.txt file.
>
> EXPECTATIONS: Meteor scatter paths are VERY specific between the
> transmitter and the receiver, typically any single event will only be
> heard by receivers within about a 20 mile footprint. This is why
> everyone can transmit at the same time in the same area, preferably
> pointing their beams in slightly different directions. As long as
> there is about 50 miles between identical TRANSMITTING stations, their
> signals will NOT probably hit the same receivers at the same times.
>
> W0RPK and K1HTV did make a successful 2 meter packet contact in 1984 over
> about a 1000 mile path, but it took 2.5 hours of constant packets.
> Hopefully by having hundreds of transmitters, and hundreds of receivers,
> we can improve the statistics. The best time for meteors is in the early
> mornings from 0400 to 0800 LOCAL time. But it is not much worse the rest
> of the day...
>
> REPORTS: Since you will possibly see packets that no one else will see,
> send all gridsquare reports (Only those known to be greater than 250 miles
> distant) to me and I will compile the data. Be SURE to include your
> gridsquare!
>
> Bob Bruninga, WB4APR @ KA3RFE.MD or
> bruninga@greatlakes.nadn.navy.mil (preferred)
>
> P.S. The Naval Academy 40 foot dish (Annapolis MD) will beam towards
> Florida on the 11th, Atlanta on the 12th, the midwest on the 13th.
> Donno about the final 2 days yet. Expected ranges are only about 550
> miles, though, because the elevation cannot get down below 10 degrees.
> The range to Atlanta and Indianapolis are about perfect for that...
>
>
>

405. RE:MODERATED LIST

From: ODYSEUS@delphi.com
Date: Thu, 27 Jul 1995 20:11:47 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HTDLE5O6AQ9VW0VD@delphi.com>
Rendered body type: text/plain

My Delete key has been overworked this past fortnight.
But I am favor of a free and open list.
Where I live (USA) I enjoy perfect freedom every morning
of my life, but there is always someone willing to nibble
away at it.
In a democracy we don't take freedoms away from the detractors
but "inform their discretion by education."
I am surprised at you , John. We all have been frustrated but
I thought you knew better.

Edward J.O'Connor W2TTM

Indulgence is the most intelligent virtue. - Joseph Conrad

406. Re: [NETSIG:1797] Re: Netrom configuring

From: mwestfal@blaze.csci.csusb.edu (Michael Westfall)
Date: Thu, 27 Jul 1995 17:11:21 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <9507280011.AA19930@blaze.csci.csusb.edu>
Rendered body type: text/plain

> .... I also think l2 retries are all that's sufficient
>
> >Jack, I have modded the code fragment for the next version
> >to include the percentage link retries in the Mheard list.
> >I'm not sure it is worth it for the L4Mheard list though. It
> >is not applicable to the L3Mheard list, so it is just in L2
> >currently.

>

It may well be worth it for L4 retries, at least until ALL the nodes
in your network are updated to the new version that routes according
to L2 retry rate, which may be never, if your network is like the one we
have around here. We still have some nodes running th original
S2000 Net/Rom firmware. Too much hassle to go to the site and pop one
EPROM out and pop another one in, I guess... (On the other hand, some
of those running S2000 Net/Rom are doing so for political reasons,
apparantly. You know, "S2000 is the ONE TRUE Net/Rom and all other
implementations are rip-offs..." While that may be true to some extent,
the other implementations are far superior, in my judgement...)

-Mike, N6KUY
mwestfal@csci.csusb.edu

407. Moderate the list?

From: WBRADFORD@delphi.com
Date: Thu, 27 Jul 1995 21:04:28 -0400 (EDT)
To: netsig@tapr.org, jra@ag9v.ampr.org
Message-ID: <01HTDN8D4VPU9QW0NQ@delphi.com>
Rendered body type: text/plain

Yes!

I have enjoyed the list (and learned a Lot) during the past year, but
I gotta agree that things are out of control and the list Needs
to be controlled.

I'd sure rather read about network issues, why ROSE might be better
than TheNet, etc., than:

      > > > > > > You did so say that!
   No way man.
      > > > > > > How dare you attack my art taste????
   I was talking about your Paclen, not your Picasso.

   (what's that Latin phrase for "until I vomit?"

The folks who are creating the problem have all ready shown that
they are not going to quit the child-like attacks, bickering, and
ego stroking without some help. The rules stated for the
moderated list look fine to me, so let's get on with it.

Thanks to the people who do the work to provide the tapr lists, and
those who will now have to read all the messages to make sure we
obey the rules.

73 to all from Bill K7EA wbradford@delphi.com   Salt Lake City

408. Re: [NETSIG:1719] Looking for Reviewers

From: shawnpat@sierra.net (Shawn Skinner)
Date: Fri, 28 Jul 1995 04:53:55 -0700
To: netsig@tapr.org
Message-ID: <199507280457.AA20823@diamond.sierra.net>
Rendered body type: text/plain

>
> I could use a couple of people to review the draft for me to help
>with both technical accuracy and understandability.
>
>>Let me know; I hope to be able to send out an electronic draft by the end
>of the week.
>
>73,
>John
>--
>John Ackermann   AG9V
>Internet: jra@ag9v.ampr.org
>Packet: AG9V@N8ACV.#DAY.OH.USA
>

Since I am not currently using NOS, but did use your book.
I was able to get my personal station going (with out any one
to connect to on AX/IP) and ping'ed the X1J nodes as far as I could.
So, I might qualify as the person who would misunderstand all that
you write. I am hoping to get the gear together for a gateway,
someday. Last version I used was 1.10b.

Do I qualify?

73 de Shawn, N7XBM.

shawnpat@sierra.net Shawn Skinner

409. Re: [NETSIG:1804] Re: NetSIG to be moderated

From: Steve Stroh <strohs@halcyon.com>
Date: Thu, 27 Jul 1995 22:44:42 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.950727221818.3992B-100000@coho.halcyon.com>
Rendered body type: text/plain

On Thu, 27 Jul 1995, Charles Brabham wrote:

> Shades of "political correctness!"
>
> Sometimes folks feel tempted to go for these deals, when they happen to
> support THIER POLITICS of the moment. Later on, when they get "bit" by these
> same mechanisms, they can only blame themselves for being silly and
> shortsighted enough to go along with it in the first place.
>
> Censorship can be called "moderation", or any other number of things.. It's
> still censorship, any way you look at it.
>
> If I was running this or any other SIG, I would guard the SIG's validity by
> not allowing a vocal group of whiners to undercut the SIG's purpose by the
> act of catering to thier complaints.

This is the reason for the moderation being imposed- to prevent the
situation you describe- "a vocal group of whiners undercutting the SIG's
purpose".

> I would allow every participant's
> postings stand on thier own merit, or lack thereof. (With the exception of
> nasty language, which I would deal with personally.)
> But in this case, it's TAPR's lookout, not mine. If TAPR wants it's SIGS to
> become a coffee klatch for whiners and bullies, it's heading in the right
> direction.

Quite the opposite- TAPR wants the discussions conducted in the SIGs to
not be drowned out by "whiners and bullies".

> If TAPR wants it's SIGs to have any widely recognized validity as a place to
> honestly express opinions, discuss issues, and get things accomplished, it's
> heading the wrong direction.
>
> On the packet network and internet, censors are routinely "routed around"
> and ignored. It serves them right.

Many of the more widely read newsgroups and mailing lists are now,
mercifully, moderated. And they are the better for it, on the whole.
Not all. And not as freely open as they once were. But, on the whole,
far, far, better moderated than the alternative.

No one (that influenced the decision to moderate, that I know of) is
delighted at the prospect of moderating, and being able to "fix things"
by encouraging a particular point of view. It's viewed as a necessary
measure, the alternative which was to allow Netsig to dissolve into a
cesspool of whining, flaming, and an absence of the discussion that
it was created for. A cesspool that would have TAPR's name on it.

>
> 73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>
> Internet: n5pvl@texoma.com

Steve N8GNJ

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

410. Re: Wire vs RF

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Fri, 28 Jul 1995 02:27:52 -0700 (MDT)
To: netsig@tapr.org

Message-ID: <m0sbklv-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
> On Mon, 24 Jul 1995, Tom Moulton wrote:
>
> > You want low overhead, you want industry standard, how about X.25?
>
> I think you missed the point, Tom. Why have ANY encapsulation! Send pure
> IP. Can't have any *less* overhead than NONE! ;-)
>

Maybe we can.

NetRom has 20 bytes overhead, IP also has 20 and TCP adds 20 more on
top of that. Might it not be possible to establish some protocol where
an abbreviated AX25 system could setup a circuit and learn that packets
going from, e.g. NWP-21 to 4KS-55 (8 bytes or even less for total
addressing) were really IP (or NETROM or ROSE or whatever) going
from 44.82.0.62 to 44.XX.YY.ZZ.   I realize some SLIP implementations
use a compressed header (CSLIP?) - could we come up with something
to take that to an extreme?

> Brian A. Lantz   http://www.lantz.com   brian@lantz.com

Bill

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

411. APPLICATION: IP over network links

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 28 Jul 95 09:46:57 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c87@ram.net>
Rendered body type: text/plain

>From: Bill Vodall <vodall@bigsky.dillon.mt.us>

Brian Lantz said:

>> I think you missed the point, Tom. Why have ANY encapsulation! Send pure
>> IP. Can't have any *less* overhead than NONE! ;-)

There are specific needs for the overhead. Hardware addressing is needed and
in the case of IP routers it is a way of identifying the specific ports.

>>
>
>Maybe we can.
>
>NetRom has 20 bytes overhead, IP also has 20 and TCP adds 20 more on
>top of that. Might it not be possible to establish some protocol where

ROSE has 3 bytes of overhead in the data field.

On User access channels ROSE has 11 more bytes than on the backbone links.
IMHO that is not that bad, considering that one would hope to travel more
hops on the backbone than on the user channel.

(11 = 2 Digi (14) - 3 bytes of X.25 overhead)

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

412. Re: [NETSIG:1812] APPLICATION: IP over network links

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 28 Jul 1995 11:04:09 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9507281106.E1168-0100000@gateway.utilpart.com>
Rendered body type: text/plain

On Fri, 28 Jul 1995, Tom Moulton wrote:

> >From: Bill Vodall <vodall@bigsky.dillon.mt.us>
>

> Brian Lantz said:
>
> >> I think you missed the point, Tom. Why have ANY encapsulation! Send pure
> >> IP. Can't have any *less* overhead than NONE! ;-)
>
> There are specific needs for the overhead. Hardware addressing is needed and
> in the case of IP routers it is a way of identifying the specific ports.
>
> >>
> > >Maybe we can.
> >
> >NetRom has 20 bytes overhead, IP also has 20 and TCP adds 20 more on
> >top of that. Might it not be possible to establish some protocol where
>
> ROSE has 3 bytes of overhead in the data field.
>
> On User access channels ROSE has 11 more bytes than on the backbone links.
> IMHO that is not that bad, considering that one would hope to travel more
> hops on the backbone than on the user channel.
>
> (11 = 2 Digi (14) - 3 bytes of X.25 overhead)

Take level 3 all the way out to the user and get rid of the other 11
extra bytes...

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:sta Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

413. RE: [NETSIG:1798] Re: Netrom configuring

From: roberts@ses6a.bt.co.uk
Date: Fri, 28 Jul 1995 16:48:13 +0100
To: netsig@tapr.org
Message-ID: <199507281631.LAA15193@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

I've implemented SLIP for the RS232 links, and in
doing so I needed to add a flag to bypass the AX.25 handlers
for send / receive of frames.

In doing so, I generalised it so that it could be done
on the radio port too (i.e. an IP encapsulated frame
would get sent as an HDLC frame without AX.25
encap) but have not put it on the air !

The same argument applies as per my posting a few
days ago - it only really applies to a point to
point links !!!

DAVE

414. Re: [NETSIG:1813] Re: APPLICATION: IP over network links

From: Barry McLarnon VE3JF <bm@hydra.carleton.ca>
Date: Fri, 28 Jul 1995 12:45:50 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199507281645.MAA21751@hydra.carleton.ca>
Rendered body type: text/plain

> > ROSE has 3 bytes of overhead in the data field.
> >
> > On User access channels ROSE has 11 more bytes than on the backbone links.
> > IMHO that is not that bad, considering that one would hope to travel more
> > hops on the backbone than on the user channel.

> >
> > (11 = 2 Digi (14) - 3 bytes of X.25 overhead)
>
> Take level 3 all the way out to the user and get rid of the other 11
> extra bytes...

Since we're talking about IP, level 3 at the user end is already a given.
The requirement being discussed is for a minimal level 2 protocol to sit
under IP. I'm not convinced that the small performance gain that you
would get from trimming the level 2 overhead would be worth the pain of
dumping AX.25 and adopting something else, unless some other enhancements
(such as the possibility of using FEC at level 2) come along with it.

More significant improvements could come (IMHO, of course) from optimizing
the use of IP in the radio environment. For instance:

1) Improving the dynamic routing protocols: wringing the most out of RIP
in small networks, making RSPF work the way it should (looks like
progress is being made here).

2) Exploring the uses of multicasting.

3) Increasing the mobility of packet stations (leveraging the research
currently going on in mobile IP).

Barry

--
  Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | AMPRnet: barry@va3tcp.ampr.org
  Packet Working Group | FreeNet: aa187@freenet.carleton.ca

415. Re: [NETSIG:1815] Re: APPLICATION: IP over network links

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 28 Jul 95 13:16:51 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c8d@ram.net>
Rendered body type: text/plain

>Since we're talking about IP, level 3 at the user end is already a given.
>The requirement being discussed is for a minimal level 2 protocol to sit
>under IP. I'm not convinced that the small performance gain that you
>would get from trimming the level 2 overhead would be worth the pain of
>dumping AX.25 and adopting something else, unless some other enhancements
>(such as the possibility of using FEC at level 2) come along with it.

Points being considered are the overhead of the level 2 at various points
which are the User channel and Backbone channels. There is some value there
when you also consider the number of bytes overhead for a specific number of
data bytes.

ROSE supports passing all PIDs and allows for 2 frames of an IP datagram,
which means you have a MTU in the 500 byte region, not bytes.
(Maybe MTU was the wrong param... largest datagram size)

This 2 frame limit is due to a BUG in ROSE. IMHO the datagram size is not
something the low level network should limit and if it would work I see
no reason not to send 8K datagrams.

This way we can reduce the additional bagage from about 28% down to less than
10%. If anyone wants to examine this in more detail start a new thread. The
other items below are important as well.
>
>More significant improvements could come (IMHO, of course) from optimizing
>the use of IP in the radio environment. For instance:

Yes!
>
>1) Improving the dynamic routing protocols: wringing the most out of RIP
>in small networks, making RSPF work the way it should (looks like
>progress is being made here).
>
>2) Exploring the uses of multicasting.
>
I have been working on Multicasting for AX25 (ie not IP specific) IP can use
it as well as other broadcast protocols for message/bulletin distribution.

It is part of the TX UI recently added to ROSE.

>3) Increasing the mobility of packet stations (leveraging the research
>currently going on in mobile IP).
>

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

416. Re: [NETSIG:1814] Re: Netrom configuring

From: shawnpat@sierra.net (Shawn Skinner)
Date: Fri, 28 Jul 1995 17:27:09 -0700
To: netsig@tapr.org
Message-ID: <199507281730.AA25230@diamond.sierra.net>
Rendered body type: text/plain

Dave Roberts says:

>I've implemented SLIP for the RS232 links, and in
>doing so I needed to add a flag to bypass the AX.25 handlers
>for send / receive of frames.
>
>In doing so, I generalised it so that it could be done
>on the radio port too (i.e. an IP encapsulated frame
>would get sent as an HDLC frame without AX.25
>encap) but have not put it on the air !
>
>The same argument applies as per my posting a few
>days ago - it only really applies to a point to
>point links !!!
>
>DAVE
>

So then, this would work (hopefully) on a duplex back bone?
Being that there is only 1 to 1 translation, similar to the
RS-232?

If so, then when the data hits the other end, it gets striped of
encapsulation, then readdressed for the RS-232 link and the reverse
then starts again?

de Shawn, N7XBM.
Stop the world, I've missed my time zone.
shawnpat@sierra.net Shawn Skinner

417. Re: [NETSIG:1816] Re: APPLICATION: IP over network links

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 28 Jul 95 13:34:57 EDT
To: netsig@tapr.org
Message-ID: <15021573.1c8f@ram.net>
Rendered body type: text/plain

Darn typos!

>ROSE supports passing all PIDs and allows for 2 frames of an IP datagram,
>which means you have a MTU in the 500 byte region, not bytes.
>(Maybe MTU was the wrong param... largest datagram size)
>

MTU (or what ever) in the 500 byte region, not 200 byte region

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

418. Re: [NETSIG:1806] RE:MODERATED LIST

From: "Mitch, WA4OSR" <fmitch@maf.mobile.al.us>
Date: Sat, 29 Jul 1995 01:19:20 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <Pine.SOL.3.91.950729011531.19068E-100000@ns1>
Rendered body type: text/plain

i am absolutely opposed to a "moderated" (which i read as 'censored')
list... who will ?moderate? the moderators??? the value of this medium
is its instant accessability... if i have to wait for someone to
'approve' a post then there are other list servers and tapr will lose out
in the long run...

```
mitch
wa4osr

         * * * The *FIRST HAM OWNER* of The Vibroplex Co., Inc. * * *
------------------------------------------------------------------------------
Email:  fmitch@maf.mobile.al.us   or, second choice, fmitch@rd.qms.com
 Felton "Mitch" Mitchell, WA4OSR
 The Vibroplex Co., Inc.
 11 Midtown Park, E.
 Mobile, AL 36606-4141 USA
 334-478-8873 Vibroplex, 334-342-7259 home, 334-476-0465 FAX
------------------------------------------------------------------------------

On Thu, 27 Jul 1995 ODYSEUS@delphi.com wrote:

>
>    My Delete key has been overworked this past fortnight.
>    But I am favor of a free and open list.
>    Where I live ( USA ) I enjoy perfect freedom every morning
>    of my life, but there is always someone willing to nibble
>    away at it.
>     In a democracy we don't take freedoms away from the detractors
>    but "inform their discretion by education."
>     I am surprised at you , John. We all have been frustrated but
>    I thought you knew better.
>
>                                 Edward J.O'Connor     W2TTM
>
>
>        Indulgence is the most intelligent virtue.  -  Joseph Conrad
>
```

419. Re: [NETSIG:1814] Re: Netrom configuring

```
From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 28 Jul 1995 13:02:44 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950728125231.18493A-100000@acca>
Rendered body type: text/plain
```

On Fri, 28 Jul 1995 roberts@ses6a.bt.co.uk wrote:

> I've implemented SLIP for the RS232 links, and in
> doing so I needed to add a flag to bypass the AX.25 handlers
> for send / receive of frames.

Dave, does this mean NOS can slip connect to a TNC-2 RS232 port?
I am not sure I understand why this is useful...

>
> In doing so, I generalised it so that it could be done
> on the radio port too (i.e. an IP encapsulated frame
> would get sent as an HDLC frame without AX.25
> encap) but have not put it on the air !

OK that sounds good. I assume this is a new version of X1J your
working on today Dave?

>
> The same argument applies as per my posting a few
> days ago - it only really applies to a point to
> point links !!!
>
> DAVE
>
>

Please explain Dave about "point-to-point links". I was hoping
that with the dynamic arp add you have now in x1j4 that a NOS station on
1 of your nodes could be directed through n nodes where n = 2,3,4, ...
but your tone suggests that only those NOS connected to a single node
could talk to each other, and not to another node.

Here at K5DI ignorance abounds....:)

73, de karl k5di

420. (no subject)

From: nuucp@gw2.att.com
Date: Sat, 29 Jul 95 02:43:30 EDT
To: netsig@tapr.org
Message-ID: <199507291903.OAA23029@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

[Empty message body]

421. RE: [NETSIG:1820] Re: Netrom configuring

From: roberts@ses6a.bt.co.uk
Date: Mon, 31 Jul 1995 09:35:16 +0100
To: netsig@tapr.org
Message-ID: <199507310836.DAA09319@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Ah, no,

When I said point to point, I was making the point (no pun inended)
that if you remove the AX.25 encap, you have no way to address the
frame in a broadcast medium.

If you send two such frames on the radio with a number of routers
listening, which of them handles it ?

The ARP handler and all other functions are still there. The only
perverse thing I had wondered about was whether to pass frames
with corrupt IP headers back to the AX.25 handler to let it have
a go, but it starts to get real messy !

Whether it is useful to have SLIP or not is debateable. I'd been
asked a while ago so I coded it. Personally, I'd use Linux kernel
support and talk AX.25 but not everyone uses it.

422. RE: [NETSIG:1817] Re: Netrom configuring

From: roberts@ses6a.bt.co.uk
Date: Mon, 31 Jul 1995 09:35:40 +0100
To: netsig@tapr.org
Message-ID: <199507310836.DAA09321@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

When it gets to the other end, it gets stripped of
HDLC framing and passed to the IP router directly.
It then gets routed over the RS232 link in whatever
protocol is selected. If the protocol is SLIP then
yes, it just gets sent as SLIP (i.e. no AX25 etc)
If it is sent as KISS or Crosslink it will have
AX.25 encap applied and sent as UI or VC depending
on the contents of the IP routing table. If you select
Netrom encap, it gets that applied too.

Dave

423. Re: Networks Imagined and Real

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Mon, 31 Jul 1995 01:07:02 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0scowL-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
> On Jul 22, 1:09pm, Bill Vodall wrote:
>
> >   I'd like to be able to send a message using the packet system (reliably)
> >   at the rate of about a thousand miles an hour anywhere on the continent.
>
> Let's try to put some numbers on this 1000 MPH concept ... and assume
> that the path of interest is indeed 1000 miles (it's not far off).
> ...
> delay of 50 minutes. Thus the round trip delay would be a bit less
> than two hours, and several exchanges of message per day would be
> possible.
>
> What did I assume to get these results?
>
> 1. BBS forward on a ten minute cycle.

> 2. BBS always forward presented traffic without delay, other
>   than the delay incurred waiting until the next cycle.
> 3. There is end-to-end BBS forwarding connectivity across
>   the path of interest.
> 4. The average long haul forwarding hop length is 100 miles.

The 100 mile BBS hop length works out amazingly well for most of Montana as
well as southern Alberta.

>
> Question: what is the problem on the path between us? Where does
> the delay occur? Why does delay occur at that point or points?

The biggest problem is that little ridge of mountains between the east
and west sides of Montana (aka The Continental Divide...) For the past two
years we've been struggling to establish a solid UHF link between east and
west.

As I enter this message on Sunday evening, I'm watching bulletins dribble in
to my system at the rate of one every 5 to 10 minutes from Missoula. This
is taking a bizarre path going south to Idaho on 145.010 then into the UHF
backbone at Butte and heading north. Even more bizarre is the fact that
we're skipping two BBS's where the sysop's are extremely busy and don't
have the time tweak the system.

So, our bandwidth is very limited. If it hadn't been for a new UHF node
coming on line yesterday, even this wouldn't be possible.   Even worse,
personal traffic is sitting on my system waiting for a chance to head
west - when the incoming ALLUS traffic quits. :-(

As far as I can tell, most Montana bbs's run on a 1 hour cycle as opposed to
10 minutes. Much of the configuration was set up when all we had was
145.010 MHz and we were living with restricted state-wide forwarding times.
Those of us on the UHF backbone still haven't fully learned to take advantage
of it. Personally, the forwarding control in the JNOS system I use doesn't
have granularity beyond hours. I could run a forwarding cycle every 10
minutes - but that would end up polling one personal mailbox each time and
could end up trying too hard on temporarily down paths. I believe it's
fairly important to be conservative when operating on shared (keyboarders, etc)
circuits.

> >   I'd like to be able to drop into Hank's BBS directly
> >   ...
> >   With a real network we should be able to NodeHop
> >   anywhere in the country (world?).
>
> Agree. I've never made it as far east as Montana ... seem to get lost
> somewhere in Idaho or Alberta.

The southern link across the divide in Alberta went away when the node
owner moved a couple miles across town. Apparently there's a slim window
from Lethbridge to the Cranbrook BC node.   Inside the window - an HT and
rubber duck on a fence post will work. Outside the window - no chance. So
there's no real (RF) path from Alberta.

Best chance should be going across Oregon/Washington to the Spokane
Area (MICA) then to Coeur D'Alene (COE), the Lookout Pass Stack (LOP)
and finally into Missoula (MSO). From Missoula it gets real weird..
The link on the UHF path (#MSO4E) east has quit working so you have to
somehow hop south to BRV (Bitteroot Valley) to Salmon (Idaho) and into
Dillon (DILN) or Butte (OLR) on 145.010.   No wonder we have trouble
passing a few messages.

Do you (Hank) have a packet map of Oregon and Washing you could (Internet)
Email me? All the maps we have here except for the local Montana map
are dated in the 80's... As long as I'm taking bandwidth from the world
let me expand my request... Packet maps of the western half of the country
would be greatly appreciated (direct to vodall@bigsky.dillon.mt.us please).
I could use: ND, SD, NE, CO, WY, ID, UTAH, AZ, CA, BC, SASK, and Manitoba

This brings up an interesting issue. (I'm justifying my use of the bandwidth
again. :-) Is there any Internet location or other process (mailserver?)
for collecting and distributing Packet Maps? If there isn't, should there
be one? Sounds like a good thing to me.

> >   I'd like to have my system (and all others) have the capability to
> >   automatically pick up and save for future reading ALL, or at least
> >   a user select-able portion, of the bulletins being sent. This should be
> >   done transparently in the background and not affect operation by the

> >   user.
>
> My code has this capability, except that it is not exposed to the users.
> The sysop determines what is saved. The hard question is how to name
> the saved bulletins, so they can later be found. Ideas appreciated.

I was thinking of something for the end-user client system that would
pick up broadcast bulletins, ie. not need a connection. Some method
of requesting fills at a later time would be needed.

I believe that completing the move the BBS bulletin paradigm to named
areas (newsgroups) for bulletins will give the capability to easily
control the showing of different topics to users.

>   ... Hank
>

--

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

August 1995

Original source file: netsig.9508
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9508

1. [NETSIG:1826] Re: Networks Imagined and Real (fwd)

From: NETSIG Moderator <netsig-m@dingus.n5lyt.datarace.com>
Date: Tue, 1 Aug 1995 01:10:13 -0500 (CDT)
To: "TAPR Networking Special Interest Group (NETSIG)" <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.950801011006.23926B-100000@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: hank_oredson@MENTORG.COM (Hank Oredson)
Subject: Re: Networks Imagined and Real

On Jul 31, 6:13am, Bill Vodall wrote:

Tried to respond via email, but lost your email address.
Also got very busy at the office ...

> Best chance should be going across Oregon/Washington to the Spokane
> Area (MICA) then to Coeur D'Alene (COE), the Lookout Pass Stack (LOP)
> and finally into Missoula (MSO). From Missoula it gets real weird..
> The link on the UHF path (#MSO4E) east has quit working so you have to
> somehow hop south to BRV (Bitteroot Valley) to Salmon (Idaho) and into
> Dillon (DILN) or Butte (OLR) on 145.010.   No wonder we have trouble
> passing a few messages.

Can get to COE and MICA with no problem ... will try some of these
this evening.

>
> Do you (Hank) have a packet map of Oregon and Washing you could (Internet)
> Email me? All the maps we have here except for the local Montana map
> are dated in the 80's... As long as I'm taking bandwidth from the world
> let me expand my request... Packet maps of the western half of the country
> would be greatly appreciated (direct to vodall@bigsky.dillon.mt.us please).
> I could use: ND, SD, NE, CO, WY, ID, UTAH, AZ, CA, BC, SASK, and Manitoba

Have no information like this at work.
However, once you are west of Idaho, and get to the Pendleton node stack
(PDT/#PDT2/#PDT4) you can connect to all of NW Oregon without problem.
i.e. C W0RLI should work fine.

There are a half dozen other ways to get west, but only 3 crossings of
the Cascades - problem is similar to crossing the continental divide,
with mountains that are 6000 to 12000 feet above average terrain ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

2. Moderation status

From: NETSIG Moderator <netsig-m@dingus.n5lyt.datarace.com>
Date: Tue, 1 Aug 1995 07:42:01 -0500 (CDT)
To: "TAPR Networking Special Interest Group (NETSIG)" <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.950801073548.25986A-100000@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

NETSIG is now in a fully moderated mode.

The moderator is John Ackerman AG9V (jra@ag9v.ampr.org), assisted by Steve
Stroh N8GNJ (strohs@halcyon.com).

I will be monitoring input to NETSIG as frequently as I am able.

Steve Stroh N8GNJ
strohs@halcyon.com

3. [NETSIG:1829] Re: NETSIG digest 274 (fwd)

From: NETSIG Moderator <netsig-m@dingus.n5lyt.datarace.com>
Date: Tue, 1 Aug 1995 10:02:41 -0500 (CDT)
To: "TAPR Networking Special Interest Group (NETSIG)" <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.950801100226.27461A-100000@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: <MITCHELL.T@ocf.compuserve.com>
Subject: Re: NETSIG digest 274

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 8/1/95 8:01AM
To: INTERNET:netsig@tapr.org 04:52 EDT 01-Aug-95 at OCF_INFORM
Subject: Re: [NETSIG:1827] NETSIG digest 274
Contents:
Hello to all on the NETSIG...

I was really impressed with the information being exchanged between Hank and Bill Vodall about the network in the northwest and some of there problems.

This got me thinking, would it be possible to get everyone on the NETSIG to write-up a description of their area network, some plusses and minuses about it, and any specialties of the system? Then send that to the NETSIG.

Even better, if we could have some storage location that will allow retrieval on demand, FTP or whatever from TAPR.ORG, based on location.

This would give everyone on the NETSIG and idea of what is in service. Also, this maybe the beginning of some "coordination" among packet systems. Since you will know how the guys down the road setup their network and find out what frequencies and baud rate you would need to be operating to have connectivity.

What does everyone think? Is this possible John?

Tim Mitchell, KA5RYF

4. [NETSIG:1829] Re: NETSIG digest 274 (fwd)

From: NETSIG Moderator <netsig-m>
Date: Tue, 1 Aug 1995 10:09:29 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508011509.KAA27603@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: <MITCHELL.T@ocf.compuserve.com>
Subject: Re: NETSIG digest 274

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 8/1/95 8:01AM
To: INTERNET:netsig@tapr.org 04:52 EDT 01-Aug-95 at OCF_INFORM
Subject: Re: [NETSIG:1827] NETSIG digest 274
Contents:
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What does everyone think? Is this possible John?

Tim Mitchell, KA5RYF

5. [NETSIG:1826] Re: Networks Imagined and Real

From: NETSIG Moderator <netsig-m>
Date: Tue, 1 Aug 1995 10:11:40 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508011511.KAA27683@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: hank_oredson@MENTORG.COM (Hank Oredson)
Subject: Re: Networks Imagined and Real

On Jul 31, 6:13am, Bill Vodall wrote:

Tried to respond via email, but lost your email address.
Also got very busy at the office ...

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> Area (MICA) then to Coeur D'Alene (COE), the Lookout Pass Stack (LOP)
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> let me expand my request... Packet maps of the western half of the country
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(PDT/#PDT2/#PDT4) you can connect to all of NW Oregon without problem.
i.e. C W0RLI should work fine.

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the Cascades - problem is similar to crossing the continental divide,
with mountains that are 6000 to 12000 feet above average terrain ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

6. [NETSIG:1829] Re: NETSIG digest 274

From: NETSIG Moderator <netsig-m>
Date: Tue, 1 Aug 1995 10:13:21 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508011513.KAA27706@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: <MITCHELL.T@ocf.compuserve.com>
Subject: Re: NETSIG digest 274

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 8/1/95 8:01AM
To: INTERNET:netsig@tapr.org 04:52 EDT 01-Aug-95 at OCF_INFORM
Subject: Re: [NETSIG:1827] NETSIG digest 274
Contents:
     Hello to all on the NETSIG...

     I was really impressed with the information being exchanged between
     Hank and Bill Vodall about the network in the northwest and some of

there problems.

This got me thinking, would it be possible to get everyone on the NETSIG to write-up a description of their area network, some plusses and minuses about it, and any specialties of the system? Then send that to the NETSIG.

Even better, if we could have some storage location that will allow retrieval on demand, FTP or whatever from TAPR.ORG, based on location.

This would give everyone on the NETSIG and idea of what is in service. Also, this maybe the beginning of some "coordination" among packet systems. Since you will know how the guys down the road setup their network and find out what frequencies and baud rate you would need to be operating to have connectivity.

What does everyone think? Is this possible John?

Tim Mitchell, KA5RYF

7. [NETSIG:1834] Re: Moderation status (fwd)

From: NETSIG Moderator <netsig-m@dingus.n5lyt.datarace.com>
Date: Wed, 2 Aug 1995 00:35:01 -0500 (CDT)
To: "TAPR Networking Special Interest Group (NETSIG)" <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.950802003451.5801A-100000@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: "Mitch, WA4OSR" <fmitch@maf.mobile.al.us>
Subject: Re: Moderation status

On Tue, 1 Aug 1995, NETSIG Moderator wrote:

> NETSIG is now in a fully moderated mode.
>
> The moderator is John Ackerman AG9V (jra@ag9v.ampr.org), assisted by Steve
> Stroh N8GNJ (strohs@halcyon.com).
>
> I will be monitoring input to NETSIG as frequently as I am able.
                                        ^^^^^^^^^^^^^^^^^^^^^^^^^^^
>
>
> Steve Stroh N8GNJ
> strohs@halcyon.com
>

does this mean that messages will be held until you are *able* to screen them?????

i totally disagree with the monitoring concept... and i don't believe this issue was put to a vote of the list members... i suggest that the list be polled on the issue... and, of course, my vote is *no* moderator... i *rtfm* and put a filter in (dsp of course) to get rid of the list noise...

mitch
wa4osr
         * * * The *FIRST HAM OWNER* of The Vibroplex Co., Inc. * * *

Email: fmitch@maf.mobile.al.us   or, second choice, fmitch@rd.qms.com
 Felton "Mitch" Mitchell, WA4OSR
 The Vibroplex Co., Inc.
 11 Midtown Park, E.
 Mobile, AL 36606-4141 USA
 334-478-8873 Vibroplex, 334-342-7259 home, 334-476-0465 FAX
---

8. Re: [NETSIG:1830] Re: NETSIG digest 274

From: Steve Stroh <strohs@halcyon.com>
Date: Tue, 1 Aug 1995 22:41:02 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.950801223749.3387A-100000@chinook.halcyon.com>
Rendered body type: text/plain

On Tue, 1 Aug 1995 MITCHELL.T@ocf.compuserve.com wrote:

> *Message:
> From: MITCHELL.T at CCPO.KCPO

> Date: 8/1/95 8:01AM
> To: INTERNET:netsig@tapr.org 04:52 EDT 01-Aug-95 at OCF_INFORM
> Subject: Re: [NETSIG:1827] NETSIG digest 274
> Contents:
>   Hello to all on the NETSIG...
>
>   I was really impressed with the information being exchanged between
>   Hank and Bill Vodall about the network in the northwest and some of
>   there problems.
>
>   This got me thinking, would it be possible to get everyone on the
>   NETSIG to write-up a description of their area network, some plusses
>   and minuses about it, and any specialties of the system? Then send
>   that to the NETSIG.
>
>   Even better, if we could have some storage location that will allow
>   retrieval on demand, FTP or whatever from TAPR.ORG, based on location.

This sounds like an ideal application of the TAPR Web Server.

>   This would give everyone on the NETSIG and idea of what is in service.
>   Also, this maybe the beginning of some "coordination" among packet
>   systems. Since you will know how the guys down the road setup their
>   network and find out what frequencies and baud rate you would need to
>   be operating to have connectivity.

The TAPR Packet Status Register newsletter is trying to feature a
different network in different parts of the country in each quarterly
issue. I took a stab at describing the Puget Sound Amateur Radio TCP/IP
Network in the Spring, 1995 issue (already dated when published), and the
1995 ARRL Digital Communications Conference (paper only- won't be there
to present it looks like).

>
>   What does everyone think? Is this possible John?
>
>   Tim Mitchell, KA5RYF

Does the above help?

Steve

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

9. [NETSIG:1838] Re: Moderation status

From: NETSIG Moderator <netsig-m>
Date: Wed, 2 Aug 1995 06:35:22 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508021135.GAA07434@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: tmoulton@ram.net (Tom Moulton)
Subject: Re: Moderation status

>does this mean that messages will be held until you are *able* to screen
>them?????
>
>i totally disagree with the monitoring concept... and i don't believe
>this issue was put to a vote of the list members... i suggest that the
>list be polled on the issue... and, of course, my vote is *no*
>moderator... i *rtfm* and put a filter in (dsp of course) to get rid of the
>list noise...

I agree.

Was any thought given to my suggestion to moderate the MEMBERSHIP such that
additions and (maybe) deletions were screened, but messages flowed FREELY.

Then the moderator(s) would only have to get into action when people started
the childish name calling that was mostly noise. At that point the moderator
would resort to private email with the offending people to get them to stop.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

10. Re: Moderation status

From: NETSIG Moderator <netsig-m>
Date: Wed, 2 Aug 1995 06:59:31 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508021159.GAA07680@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Tom Moulton asked the question about whether we considered his idea of simply reacting to problem messages
after the fact.

Yes, we did, and although the idea has merit, we decided not to do it that way because it's essentially the same approach that the SIGs have tried in the past and it hasn't worked well. It has 2 problems: first, it doesn't act until after the damage is done, and second, it's actually more time consuming because (at least for me) it takes quite a while to draft a reasonable response to someone who's being unreasonable. Finally, we don't like the idea of barring people entirely from the list. We hope that most of the problems are the result of short-term problems, and feel that per-message moderation
in the long run is better than per-person moderation.

Steve and I hope that you won't see any significant delays in message flow on the list as a result of moderation. With two of us handling the task (and we'll add more support if it's necessary), we hope that most messages will be released within twelve hours. We also don't expect that you'll see any difference in the technical content of the list -- we are <not> going to censor based on our views of the correct [protocol|software|hardware]. We do expect that you'll see a reduction in namecalling and baiting.

I also want to clarify one thing: the decision to moderate wasn't taken lightly, and it was not my decision alone. The policy was approved by both the TAPR board, and by the TAPR mailing list administrator
groups.

John

11. [NETSIG:1837] Re: NETSIG digest 274

From: NETSIG Moderator <netsig-m>
Date: Wed, 2 Aug 1995 06:59:59 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508021200.HAA07703@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Sender: "John M. Wilcox" <0005018901@mcimail.com>
Subject: Re: NETSIG digest 274

-------- REPLY, Original message follows --------

> This got me thinking, would it be possible to get everyone on the
> NETSIG to write-up a description of their area network, some plusses
> and minuses about it, and any specialties of the system? Then send
> that to the NETSIG.

-------- REPLY, End of original message --------
In Maine, the standard configuration for 'network' nodes is as follows:
Definition NODE= A collection of multiple radio/tnc combinations on
different frequencies
A single radio/tnc is not a node in this
system!
BACKBONE A dedicated point to point link (usually on 220/440)
not
accessible by users (Joe HAM)

I tried to describe this graphically for Hank/W0RLI but my E-Mail program
is 'graphically
challenged'.
Picture this: Three TNCs stacked one on top of the other.
The top TNC is for user access, usually on 2 meters at 1200 baud
The middle TNC is a backbone link to the south on 220
The bottom TNC is a backbone link to the east on 440

The middle and bottom ports use directional antennas to the next node's
backbone
port on the same frequency. There is only ONE pair of radios/tncs on any
particular
frequency for adjacent nodes. This is what point to point means. Soooo, the
above
NODE's 220 port connects to the adjacent NODE's 220 backbone port. From
this

adjacent NODE the path would go to another adjacent NODE on a seperated
frequency
from the previous two nodes. This method IS hardware intensive but there
are no collisions
on the backbone ports (no one else on that frequency) due to "hidden
transmitters".
This makes the movement of bits quite rapid, even tho it is currently only
at 1200 baud.
The only place where a collision could occur is at the user port. If this
becomes a problem
then it is time for another NODE to be constructed to handle users.

All these ports on the nodes are connected using diode matrixes on the
serial ports running
at the maximum speed the serial port allows.

Did anybody understand that? I work midnights here so there is some dribble
on my clock and
the data doesn't always come out error free.........

73 de John/NS1Z
5018901 @ mcimail.com
KO-23, 25

12. Re: [NETSIG:1835] Re: Moderation status

From: Steve Stroh <strohs@halcyon.com>
Date: Wed, 2 Aug 1995 05:47:51 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.950802053632.7792A-100000@chinook.halcyon.com>
Rendered body type: text/plain

On Wed, 2 Aug 1995, Mitch, WA4OSR wrote:

<deletia>

> > I will be monitoring input to NETSIG as frequently as I am able.
> >
> > Steve Stroh N8GNJ
> > strohs@halcyon.com
>
> does this mean that messages will be held until you are *able* to screen
> them?????

Yes. that, rejecting your post as not appropriate, and the ability to add
comments to your message is what moderation means in the context of a
mailing list or newsgroup. I do not intend to make use of the ability to
add comments to a posting.

> i totally disagree with the monitoring concept... and i don't believe
> this issue was put to a vote of the list members...

You're correct- it was not. It was a decision by the moderator, John
Ackerman AG9V, endorsed by TAPR President Greg Jones WD5IVD.

> i suggest that the
> list be polled on the issue... and, of course, my vote is *no*
> moderator... i *rtfm* and put a filter in (dsp of course) to get rid of the
> list noise...

The list was warned several times that moderation was a possibility if the
types of messages that were objectionable continued- blatantly off topic
and personal attacks. Not so surprisingly, the worst offenders declared
that "they wouldn't be part of a moderated list" and unsubscribed,
relieving the moderators of what would have been their main burden-
rejecting inappropriate posts.

If you are a TAPR member and wish to register a protest, I suggest sending
a message to Greg Jones WD5IVD, TAPR President, wd5ivd@tapr.org.

>
> mitch
> wa4osr
>   * * * The *FIRST HAM OWNER* of The Vibroplex Co., Inc. * * *
> --
> Email: fmitch@maf.mobile.al.us   or, second choice, fmitch@rd.qms.com
> Felton "Mitch" Mitchell, WA4OSR
> The Vibroplex Co., Inc.
> 11 Midtown Park, E.
> Mobile, AL 36606-4141 USA

```
>  334-478-8873 Vibroplex, 334-342-7259 home, 334-476-0465 FAX
> ------------------------------------------------------------------------------

Steve Stroh N8GNJ
Replying in NETSIG Co-moderator role

--
Steve Stroh N8GNJ    strohs@halcyon.com
Amateur Radio TCP/IP  n8gnj@sw.n8gnj.ampr.org
```

13. Re: [NETSIG:1833] Re: NETSIG digest 274

```
From: jra@ag9v.ampr.org
Date: Wed, 2 Aug 1995 07:21:10 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199508021121.HAA22186@ag9v.ampr.org>
Rendered body type: text/plain

You (MITCHELL.T@ocf.compuserve.com) write:
>
>     This got me thinking, would it be possible to get everyone on the
>     NETSIG to write-up a description of their area network, some plusses
>     and minuses about it, and any specialties of the system?  Then send
>     that to the NETSIG.

This is actually one of the goals of the TAPR networking SIG.  We've made
a couple of requests, and had a few descriptions posted, but unfortunately
this project has been lost in the noise.  Let's get those descriptions
posted!

John
--
John Ackermann   AG9V
Internet:  jra@ag9v.ampr.org
Packet:    AG9V@N8ACV.#DAY.OH.USA
```

14. RE: [NETSIG:1840] Re: Moderation status

```
From: NETSIG Moderator <netsig-m>
Date: Wed, 2 Aug 1995 14:52:21 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508021952.OAA12665@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Forwarded message:
>From bobsmith@mail.i2020.net Wed Aug  2 14:24:19 1995
Message-Id: <Chameleon.950802103215.bobsmith@>
Date: Wed,  2 Aug 95 10:28:00 EDT
Reply-To: bobsmith@mail.i2020.net (Robert L. Smith)
From: bobsmith@mail.i2020.net (Robert L. Smith)
To: NETSIG Moderator <netsig-m@dingus.n5lyt.datarace.com>
Subject: RE: [NETSIG:1840] Re:  Moderation status


---   snip lots  --

>I also want to clarify one thing:  the decision to moderate wasn't taken lightly, and it
was not my
>decision alone.  The policy was approved by both the TAPR board, and by the TAPR
mailing list administrator
>groups.

Just to offset the protestors -- I appreciate  your reasoned approach.  We are
fighting a somewhat similar problem on a local 2m repeater and I, for one,
can fully appreciate the level of effort it takes to 'take a reasoned approach
to unreasonable people'.

Keep up the good work!

    -----------------
  Robert L. Smith             804/745-1065       bobsmith@i2020.net
  Smith Machine Works, Inc.                   wa4ypv@w4za.ampr.org
```

15. Notification

```
From: NETSIG Moderator <netsig-m>
Date: Thu, 3 Aug 1995 07:31:55 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508031231.HAA22404@dingus.n5lyt.datarace.com>
Rendered body type: text/plain
```

Forwarded message:
>From listproc@tapr.org Wed Aug 2 22:14:26 1995
Date: Wed, 2 Aug 1995 22:14:22 -0500
Message-Id: <199508030314.WAA17536@dingus.n5lyt.datarace.com>
Reply-To: listproc@tapr.org
Sender: listproc@tapr.org
From: listproc@tapr.org
To: netsig-m@tapr.org
Subject: Notification
X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
X-Comment: Tucson Amateur Packet Radio list processor

Approval request from listproc@tapr.org for posting the following
message to moderated list NETSIG. If approved, send the following request to
listproc@tapr.org:

APPROVE NETSIG <password> 3

If the message is to be discarded, reply with the following request:

DISCARD NETSIG <password> 3

---------------------------- message follows ----------------------------
>From rmackay@cycor.ca Wed Aug 02 22:13:38 1995
Message-Tag: 3
Received: from bud.peinet.pe.ca (bud.peinet.pe.ca [198.167.1.1]) by dingus.n5lyt.datarace.com
(8.6.12/8.6.9) with ESMTP id WAA17493 for <netsig@tapr.org>; Wed, 2 Aug 1995 22:13:26 -0500
Received: from ch-as11.peinet.pe.ca (ch-as11.peinet.pe.ca [198.167.2.111]) by bud.peinet.pe.ca
(8.6.11/8.6.11) with SMTP id AAA01066 for <netsig@tapr.org>; Thu, 3 Aug 1995 00:13:18 -0300
Date: Thu, 3 Aug 1995 00:13:18 -0300
Message-Id: <199508030313.AAA01066@bud.peinet.pe.ca>
X-Sender: rmackay@bud.peinet.pe.ca
X-Mailer: Windows Eudora Version 1.4.3
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: netsig@tapr.org
From: rmackay@cycor.ca (Ron VE1AIC)
Subject: Re: [NETSIG:1840] Re: Moderation status

>Tom Moulton asked the question about whether we considered his idea of
simply reacting to problem messages
>after the fact.
>
>Yes, we did, and although the idea has merit, we decided not to do it that
way because it's
>essentially the same approach that the SIGs have tried in the past and it
hasn't worked well. It has 2
>problems: first, it doesn't act until after the damage is done, and second,
it's actually more time
>consuming because (at least for me) it takes quite a while to draft a
reasonable response to someone
>who's being unreasonable. Finally, we don't like the idea of barring
people entirely from the list. We
>hope that most of the problems are the result of short-term problems, and
feel that per-message moderation
>in the long run is better than per-person moderation.
>

I agree John this is a much better way to control the "noise", you're doing
a great
job and I'm sure the "silent" majority is thankfull for the moderators
efforts.

73 - Ron ve1aic

16. Notification

From: NETSIG Moderator <netsig-m>
Date: Thu, 3 Aug 1995 07:32:59 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508031233.HAA22421@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Forwarded message:
>From listproc@tapr.org Wed Aug 2 20:35:19 1995
Date: Wed, 2 Aug 1995 20:35:16 -0500
Message-Id: <199508030135.UAA16666@dingus.n5lyt.datarace.com>
Reply-To: listproc@tapr.org
Sender: listproc@tapr.org
From: listproc@tapr.org

To: netsig-m@tapr.org
Subject: Notification
X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
X-Comment: Tucson Amateur Packet Radio list processor
X-Status:

Approval request from listproc@tapr.org for posting the following
message to moderated list NETSIG. If approved, send the following request to
listproc@tapr.org:

APPROVE NETSIG <password> 2

If the message is to be discarded, reply with the following request:

DISCARD NETSIG <password> 2

---------- message follows ----------
>From lcz@pioneer.wcjc.cc.tx.us Wed Aug 02 20:34:36 1995
Message-Tag: 2
Received: from pioneer.wcjc.cc.tx.us (pioneer.wcjc.cc.tx.us [198.216.12.11]) by
dingus.n5lyt.datarace.com (8.6.12/8.6.9) with SMTP id UAA16641 for <netsig@tapr.org>; Wed, 2 Aug 1995
20:34:31 -0500
Received: by pioneer.wcjc.cc.tx.us (Smail3.1.28.1 #5)
        id m0sdpB8-0005itC; Wed, 2 Aug 95 20:34 CDT
Date: Wed, 2 Aug 1995 20:34:29 -0500 (CDT)
From: Lee Ziegenhals <lcz@pioneer.wcjc.cc.tx.us>
To: netsig@tapr.org
Subject: Jes' checkin'
Message-ID: <Pine.SV4.3.90.950802203352.9350A-100000@pioneer.wcjc.cc.tx.us>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

This is to verify the new moderation is working. Do not read under
penalty of law.

17. Notification

From: NETSIG Moderator <netsig-m>
Date: Thu, 3 Aug 1995 12:03:43 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508031703.MAA25663@dingus.n5lyt.datarace.com>
Rendered body type: text/plain

Forwarded message:
>From listproc@tapr.org Thu Aug 3 12:00:33 1995
Date: Thu, 3 Aug 1995 12:00:30 -0500
Message-Id: <199508031700.MAA25602@dingus.n5lyt.datarace.com>
Reply-To: listproc@tapr.org
Sender: listproc@tapr.org
From: listproc@tapr.org
To: netsig-m@tapr.org
Subject: Notification
X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
X-Comment: Tucson Amateur Packet Radio list processor

Approval request from listproc@tapr.org for posting the following
message to moderated list NETSIG. If approved, send the following request to
listproc@tapr.org:

APPROVE NETSIG <password> 14

If the message is to be discarded, reply with the following request:

DISCARD NETSIG <password> 14

---------- message follows ----------
>From steves@wetnet.wa.com Thu Aug 03 11:59:55 1995
Message-Tag: 14
Received: from wetnet.wa.com (wetnet.wa.com [198.202.16.250]) by dingus.n5lyt.datarace.com
(8.6.12/8.6.9) with ESMTP id LAA25574 for <netsig@tapr.org>; Thu, 3 Aug 1995 11:59:50 -0500
Received: (from steves@localhost) by wetnet.wa.com (8.6.11/8.6.9) id JAA08307; Thu, 3 Aug 1995 09:59:31
GMT
Date: Thu, 3 Aug 1995 09:59:26 +0000 (GMT)
From: Steve Stroh <steves@wetnet.wa.com>
To: netsig@tapr.org
Subject: Test of moderation approval process
Message-ID: <Pine.LNX.3.91.950803095844.8303A-100000@wetnet.wa.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Test of moderation approval process of Netsig, forwarding to
Co-moderator's account.

18. CP in high speed RF

From: Jeff King <wb8wka@wb8wka.ampr.org>
Date: Thu, 03 Aug 95 23:59:39 UTC
To: netsig@tapr.org
Message-ID: <4396@wb8wka.ampr.org>
Rendered body type: text/plain

Hi:

Can anyone share any insight into the use of circular polarization in
high speed RF work? As I understand it, CP is more resistant to multi-
path as opposed to linear polarization.

Also, can anyone share any design thoughts or references to designing
circularly polarized omni directional antennas? I'm looking for gain
designs.... at least 6dbd... to be used as a hub that is feeding multiple
directional antennas.

Thanks for your thoughts ahead of time.

Jeff King

SMTP   - wb8wka@wb8wka.ampr.org [44.102.16.16] | Operating
Internet - wb8wka@merit.edu , jking@merit.edu | on the edge
AX25   - wb8wka@wu8c.#SEMI.MI.USA.NOAM | of Chaos

19. Re: CP in high speed RF

From: MPFahmie@lbl.gov (Mike Fahmie)
Date: Fri, 04 Aug 1995 09:59:23 -0700
To: netsig@tapr.org
Message-ID: <199508041659.JAA11018@mh1.lbl.gov>
Rendered body type: text/plain

Jeff King asked;

>Also, can anyone share any design thoughts or references to designing
>circularly polarized omni directional antennas? I'm looking for gain
>designs.... at least 6dbd... to be used as a hub that is feeding multiple
>directional antennas.
>
Look into the Quadrifilar Helix (Reflections, Chapter 22, M.W. Maxwell W2DU).
A 1.5 turn 1.25 wavelength long design should give you about 4dBi, a few dB
short of the 6dBd you are seeking, but perhaps variations of the design may
achieve your goal. According to W2RU's publication, this antenna provides
omni-directional CP and is used extensively in spacecraft. I first became
aware of the antenna when I noted it was used in my Garmin GPS receiver.

The author also notes that some info on the antenna may be found in the
ARRL Antenna Book, 15th Edition, Chapter 20.

Mike

 Mike Fahmie - WA6ZTY @ N6EEG - MPFahmie@lbl.gov
Advanced Light Source - Lawrence Berkeley Laboratory

20. Diodes, or better?

From: WBRADFORD@delphi.com
Date: Fri, 04 Aug 1995 21:38:32 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HTOURG3PS290NVSF@delphi.com>
Rendered body type: text/plain

When using a node stack of three or more TNC's (TheNet, TNC-II Clones)
is there a better way to interconnect the TNC's than using the diode
matrix? Or is the diode method just fine? Or is this my real
problem?

I added a third TNC (9600 440Mhz) to a 440/145 system and
communications between TNC's suddenly became Very Slow. 95% of
the traffic is between the 440 and 145 TNC's with about 5% to the
new 9600 unit.

Ideas and thoughts would be appreciated.

73 Bill k7ea@wb7ulh.ut   wbradford@delphi.com Salt Lake City

21. Re: [NETSIG:1850] Diodes, or better?

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 6 Aug 1995 04:37:38 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950806043157.27738D-100000@acca>
Rendered body type: text/plain

On Sat, 5 Aug 1995 WBRADFORD@delphi.com wrote:

> When using a node stack of three or more TNC's (TheNet, TNC-II Clones)
> is there a better way to interconnect the TNC's than using the diode
> matrix? Or is the diode method just fine? Or is this my real
> problem?

The diode matrix works just fine. It is not quite as fast as the duplex 2 tnc connection but it is close.

>
> I added a third TNC (9600 440Mhz) to a 440/145 system and
> communications between TNC's suddenly became Very Slow. 95% of
> the traffic is between the 440 and 145 TNC's with about 5% to the
> new 9600 unit.
>

Could only be 1 thing. You forgot to run a wire from the 3 jumper point on the tnc to pin 23 of the rs232 plug. If you did do this, then you got a diode in backward (I do that a lot).

> Ideas and thoughts would be appreciated.
>
> 73 Bill k7ea@wb7ulh.ut   wbradford@delphi.com Salt Lake City
>
-karl k5di

22. Ham-net v Internet

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 6 Aug 1995 14:53:58 -0600 (MDT)
To: Sig Networking <netsig@tapr.org>
Message-ID: <Pine.SUN.3.91.950806145002.10234F-100000@acca>
Rendered body type: text/plain

WHY HAMS USE THE INTERNET

Hank, w0rli and others have been worried that more and more packet radio bulletin board stations are using radio less and the Internet a great deal. I have been thinking about this and from my own experience know first hand that the packet nodes are breaking, being taken down, and the Internet is replacing them. So I did a little cost analysis and came up with this.

I have a 14,400 b/sec telephone modem that really works good. It cost $100.00 used. I have a telephone bbs called Karl's Place with the fidonet address of 1:305/111. But I use the modem and JNOS to connect to the Internet as well.

While writing this message I was down loading a 600,000 byte file from the JNOS run by Remi Houten f6cnb in Houston, TX. In this big file is all the bulletins Remi has for me. I forward them to the other pbbs I work with. This includes kc5izt in Albuquerque, NM and a new guy in Alamogordo, NM Phil, and Glenn wb7tls in Tucson, AZ, and Roy at the k5wph pbbs in El Paso, TX.

It will interest you to know what it cost me to get the big file from Remi. The cost was ZERO! And the cost to send this stuff to Tucson and Albuquerque is also ZERO. This is because I use the Internet. So what I have invested in the internet is my time and a $100.00 modem.

I forward to El Paso TX using ham radio. The cost of this has been large compared to the modem. I bought a used radio for 145.07 ($150) and a new TEKK ($120) and DRSI card ($150) and TNC ($129)

and coax ($100) and 9600 baud modem ($100) and antenna's ($200)
and other things. But the network to El Paso cost me $750.00 and
at least that much from the guys in El Paso.

     I forward to Alamogordo via my 1200 baud node CAB on a
mountain. That node costs me very little but several trips to the
mountain @ $30 per trip and $50 a year for electricity and $25 of
the BLM site license cost and a new antenna ($120) and ...

     So the message here is clear. USE THE INTERNET! IT IS CHEAPER
THAN HAM RADIO.

     This may change. The Internet being available to everyone as
it is now is a new thing. This will change because I can pay a
commercial Internet server less than I would pay the telephone
company for similar data transmission. Whoever is paying the long
distance charges for the Internet will discover this and charge a
lot more for a connection.

     But for right now if a ham asked me to help put up a network
of nodes from home to Tucson, AZ I would say no. It's too
expensive.

73, de karl k5di@k5di.cruces.nm.usa.noam (to bad Namibia)

23. Re: [NETSIG:1851] Re: Diodes, or better?

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sun, 6 Aug 1995 22:07:32 -0300
To: netsig@tapr.org
Message-ID: <199508070107.WAA13129@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>
>On Sat, 5 Aug 1995 WBRADFORD@delphi.com wrote:
>
>> When using a node stack of three or more TNC's (TheNet, TNC-II Clones)
>> is there a better way to interconnect the TNC's than using the diode
>> matrix? Or is the diode method just fine? Or is this my real
>> problem?
>
>   The diode matrix works just fine. It is not quite as fast as the
>duplex 2 tnc connection but it is close.
>

Reminds me I was going to look into PacComms Coax-Lan thing. ANyone used
it one a many node stack with TheNet?

73 - Ron ve1aic

24. Re: [NETSIG:1850] Diodes, or better?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 7 Aug 95 09:18:04 PDT
To: netsig@tapr.org
Message-ID: <9508070918.ZM12998@hanko>
Rendered body type: text/plain

On Aug 5, 10:39pm, WBRADFORD@delphi.com wrote:
> Subject: [NETSIG:1850] Diodes, or better?
> When using a node stack of three or more TNC's (TheNet, TNC-II Clones)
> is there a better way to interconnect the TNC's than using the diode
> matrix? Or is the diode method just fine? Or is this my real
> problem?

We have a number of nodes with 4 - 12 radios.
They all use g8bpq software as the switch, and run on either
Kantronics data engines or junker ATs.

A much better solution, in my mind, for several reasons:
there is a single routing table, instead of the 4 - 12 different
routing tables. There is a single alias/callsign for the entire
node. When (not if) one tnc crashes and locks up it's serial
port, only that tnc is off air, the others continue to work.
One minor caveat about this: with multi-drop KISS there is at
least one (rare) failure mode that can take down all tncs on
their shared serial port. All the others keep running.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

25. Re: Diodes or better...

From: wb9mjn@uugate.wa7slg.ampr.org
Date: Mon, 07 Aug 95 10:47:24 mst
To: netsig@tapr.org
Message-ID: <24886@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

Hi,
The diodes between NETROM TNC s works ok, but it does represent significant
Delay. If u are running two 9600 baud NETROM s, in a stack of three or
more TNC s, the delay can respresent as much, and many times more delay
Tthan the radio path.

Additionally, when running 3 or more tncs in a stack, the action of the
automatic router, will cause looping routes. When a path dies out on the RF side, the router
will end up causing the route to go each of the nodes in a stack of three
or more. If the RS-232 qaulity is not less than 255, these routes will
never die away, and will be permanent. Ur stack will tell the world, from then on, that it has a path
to nodes that may not be on the air anylonger. The common solution to this is
set the RS-232 quality to 254. This works, but it makes the decay
of paths interminably long.

To solve this problem, I "star" the routing within a node stack.   Using defined neigbor/Locked
ROUTES techniques on the RS-
232 path, routing
is set up so that no loops can occure with a node stack. The penalty for this
is that nodes that have faulty back up memory, or fail often cause the
operator to have to redo the "star" programming. If ur facility is not reliable, u may want
to avoid the "star" technigue.

Of course, the real way around this problem, is a single processor node,
such as a PacketTEN.

73, Don. wb9mjn.

□□

26. Re: [NETSIG:1850] Diodes, or better?

From: paul@paccomm.com
Date: Mon, 07 Aug 95 13:46:45 UTC
To: netsig@tapr.org
Message-ID: <2920@paccomm.com>
Rendered body type: text/plain

The PacComm CoaxLAN will run 8 TNCs at up to 38400bps.
It will also drive about 3000' of cable. It was originally
designed go up the side of a mountain!

The SPIRIT-2 has it built-in. It can be added to the TINY-2
and MFJs........

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~    .
Paul Evans, W4/G4BKI  paul@paccomm.com  +1 (813) 874-2980    |\
Fax:+1 (813) 872-8696                                       /| \
Views expressed here are not necessarily those of PacComm  / |--\
Don't surf the net, SAIL it!                              /  | * \
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Catalina 36: Tall rig (58'), Winged Keel (4' 2"),       /    |     \
Full batten main, Boston Whaler dinghy.                /-----|------` |
PacComm Packet Radio Systems                          \------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \_____________/.__.
                                                   ~~~~~~~~~~~~~~~~~~~~~~~
```

27. Re: [NETSIG:1853] Re: Diodes, or better?

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Mon, 7 Aug 1995 14:58:47 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9508071419.B3544-0100000@gateway.utilpart.com>
Rendered body type: text/plain

As to COAXlan or rather TI3DJT COAXlan made by PacComm Packet Radio Systems.

I have had as many as 8 of the things banging away at one another on a real stack, since I did the design, I simulated 22 of them figuring that would be way over what anyone in their right mind would put on the same cable, worked great even with that amount of loading.

I also tested the devices out with a roll of 5000+ feet of coax cable between two sets of units, this was to test out the possibility of putting switches on a tall tower, your network devices at the top and your LAN devices at the lower part of the tower, of course you will probably not see a 5000 foot tower in your lifetime, but there are some mountains out there...

Speed, it has been tested to 138kb... at which point the TNC ran out of gas... So I do believe that there is more than enough head room for the average switch/node stack to operate on the COAXlan.

Chuck Hast e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077

---

28. Re: [NETSIG:1852] Ham-net v Internet

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 7 Aug 95 09:22:20 PDT
To: netsig@tapr.org
Message-ID: <9508070922.ZM13008@hanko>
Rendered body type: text/plain

On Aug 6, 6:04pm, Karl F. Larsen wrote:
> Subject: [NETSIG:1852] Ham-net v Internet
>
>

> But for right now if a ham asked me to help put up a network
> of nodes from home to Tucson, AZ I would say no. It's too
> expensive.

And the same kind of analysis (comparing apples to aardvarks) will prove that 20M SSB is too expensive (the telephone is SO much cheaper). But what does this have to do with ham radio?

Nothing.

... Hank

--

Hank Oredson @ Mentor Graphics Library Operations
Internet : hank_oredson@mentorg.com "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

---

29. Re: [NETSIG:1854] Re: Diodes, or better?

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 7 Aug 1995 15:31:02 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950807152728.12518A-100000@acca>
Rendered body type: text/plain

On Mon, 7 Aug 1995, Hank Oredson wrote:

This is for sure! the best advice if you plan on having more than 4 TNC's at a site. At 4 you are still a tiny bit cheaper than a Data Engine. If you can afford the Data Engine the software G8BPQ software is free and you have a FLAT WONDERFUL SYSTEM!

> On Aug 5, 10:39pm, WBRADFORD@delphi.com wrote:
> > Subject: [NETSIG:1850] Diodes, or better?
> > When using a node stack of three or more TNC's (TheNet, TNC-II Clones)
> > is there a better way to interconnect the TNC's than using the diode
> > matrix? Or is the diode method just fine? Or is this my real
> > problem?
>
> We have a number of nodes with 4 - 12 radios.
> They all use g8bpq software as the switch, and run on either
> Kantronics data engines or junker ATs.
>
> A much better solution, in my mind, for several reasons:
> there is a single routing table, instead of the 4 - 12 different
> routing tables. There is a single alias/callsign for the entire
> node. When (not if) one tnc crashes and locks up it's serial
> port, only that tnc is off air, the others continue to work.
> One minor caveat about this: with multi-drop KISS there is at
> least one (rare) failure mode that can take down all tncs on
> their shared serial port. All the others keep running.
>
> ... Hank
>
> --
>
> Hank Oredson @ Mentor Graphics Library Operations
> Internet : hank_oredson@mentorg.com "Parts 'R Us!"
> Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
>
-KARL K5DI

30. Amateur versus non-Amateur linking

From: NETSIG Moderator <netsig-m@tapr.org>
Date: Mon, 7 Aug 1995 17:22:50 -0500 (CDT)
To: "TAPR Networking Special Interest Group (NETSIG)" <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.950807170811.676E-100000@sys1.tapr.org>
Rendered body type: text/plain

There have been several posts to NetSIG today that continue the Amateur versus non-Amateur network linking holy war/flamefest.

Non-Amateur network links are in use currently, including tunneling and transport via the Internet, and are apparently judged to be useful by the organizations and individuals that have implemented them.

The "big picture" of whether Amateur Radio, as a whole, or Amateur Networking in particular will ultimately be helped, or harmed by their existance and use, is best left to the individuals and organizations to conclude for themselves.

I encourage anyone who wishes to "state their case" to a wide audience, to write an article for the TAPR Packet Status Register. Attacking individuals on one side or the other in this forum serves little purpose.

We now return you to the intended topics of NetSIG.

Steve Stroh
Co-Moderator, TAPR NetSIG Mailing List
strohs@halcyon.com

31. Re: [NETSIG:1859] Re: Diodes, or better?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 7 Aug 95 16:01:35 PDT
To: netsig@tapr.org
Message-ID: <9508071601.ZM13616@hanko>
Rendered body type: text/plain

On Aug 7, 5:13pm, Karl F. Larsen wrote:
> Subject: [NETSIG:1859] Re: Diodes, or better?
>

>
> On Mon, 7 Aug 1995, Hank Oredson wrote:
>
>
>
>   This is for sure! the best advice if you plan on having more than
> 4 TNC's at a site. At 4 you are still a tiny bit cheaper than a Data
> Engine. If you can afford the Data Engine the software G8BPQ software is
> free and you have a FLAT WONDERFUL SYSTEM!

And if you can't afford a data engine, you can find junker
XT and AT systems for circa $100 ... or even less if you
look hard ... and for a 4 or more port system, the delta
cost is pretty small. If you choose the xt/at, you can
also run an application at the site (several if you use
 DESQview) and even hook up LL access to the system.

You could even run NET or NOS if you wanted to do that.

The downside of course is that if the computer fails, the
entire node stack is off air. At this stage of our network
development, we do not have any xt/at systems on remote sites
(only DE or 'traditional node stacks'), but will be experimenting
with them at a couple sites (which have fairly easy access).

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

32. When it's hot...

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Tue, 8 Aug 1995 04:37:26 -0700 (MDT)
To: NETSIG TAPR <netsig@tapr.org>
Message-ID: <m0sfm2L-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

This silly hobby is fun when it works...

The new UHF backbone node near Butte (Montana) has really opened things
up. We still have no real path across the Continental Divide to Missoula
but things going south are working great.

The new site, #BTM4 provides a good solid connection from Helena to
#OLR - at the Our Lady of the Rockies statue over-looking Butte. #OLR
links east into Bozeman - a path that was just today upgraded and
appears to be working much better. #OLR is connected to OLR which
ties south on 145.010.   Using that path I've been able "hop" through
southern Idaho into Utah and go both east to Castledale and west
as far as Reno. Performance is quite reasonable. Fun stuff.

Now, since I've never been accused of knowing enough to be content:

I'm wishing that we could eliminating the hidden transmitters on the
Montana backbone - #BTM4 has 4 - OUCH!   Boy to think how well this
would work if that little detail was cleaned up.

I'm wishing that some magic would happen and the path to the west would
start working. It's close - #BTM4 is hearing Missoula but apparently
it's not getting back to it. Sigh. We need a beam with 3 major lobes
to make this site work. (And to bring up all the hidden transmitters. :-(

Those two you knew I'd be wishing about... Here's some new ones:

I'm wishing that folks would tweak the NetRom routing a bit. It can't
be true that all those paths in all those nodes I've visited are all
good solid 192 quality. Can it?

I'm wishing that folks would follow the APRS convention and put the
6 digit Grid Square Identifier in the Info message.   That would make
it far easier to have a feel for where the node was at. Is there any
sort of APRS convention for noting the elevation of a system? Maybe
something like: [DN48ar3600] would work?

I'm wishing that more folks knew how to use the CQ function and
how to answer CQ's from the nodes. It would be nice if TNC's/Client
software could be smart enough to recognize CQ's and notify the user
if so desired.

Here's one I just thought of... I'm wishing that once connected to, for
example, node D of "A B C D" I could connect-back to nodes A, B or C without
having to go all the way back to the next node that has "stay-connected"
turned on.

Lastly - I'm wishing and hoping that someone could point me towards Utah
and Nevada node maps.

It's been a long day - we found two diamond back rattle snakes in the yard
this morning. I wonder what's going to happen tomorrow?

73's

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

33. Re: [NETSIG:1861] Re: Diodes, or better?

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 8 Aug 1995 10:38:27 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950808103407.5294A-100000@acca>
Rendered body type: text/plain

On Tue, 8 Aug 1995, Hank Oredson wrote:

> On Aug 7, 5:13pm, Karl F. Larsen wrote:
> > Subject: [NETSIG:1859] Re: Diodes, or better?
> >
> >
> > On Mon, 7 Aug 1995, Hank Oredson wrote:
> >
> >
> >
> >   This is for sure! the best advice if you plan on having more than
> > 4 TNC's at a site. At 4 you are still a tiny bit cheaper than a Data
> > Engine. If you can afford the Data Engine the software G8BPQ software is
> > free and you have a FLAT WONDERFUL SYSTEM!
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> And if you can't afford a data engine, you can find junker
> XT and AT systems for circa $100 ... or even less if you
> look hard ... and for a 4 or more port system, the delta
> cost is pretty small. If you choose the xt/at, you can
> also run an application at the site (several if you use
> DESQview) and even hook up LL access to the system.
>
> You could even run NET or NOS if you wanted to do that.
>
> The downside of course is that if the computer fails, the
> entire node stack is off air. At this stage of our network
> development, we do not have any xt/at systems on remote sites
> (only DE or 'traditional node stacks'), but will be experimenting
> with them at a couple sites (which have fairly easy access).

        Hank, a few years ago the hams in Tucson put a *REAL* computer at
their 9000 foot radio site with the then current g8bpq switch software.
It was a year before they got it working properly. The problems were
power glitches that sent the puter into no-no land, lightning that blew
up the power supply, ect. So it's not the same as we both have at home.

-karl k5di

>
>   ... Hank
>
>
>
>
> --
>
> Hank Oredson @ Mentor Graphics   Library Operations
> Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"

> Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
>

34. Re: [NETSIG:1863] Re: Diodes, or better?

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Tue, 8 Aug 95 13:52:16 PDT
To: netsig@tapr.org
Message-ID: <9508081352.ZM15881@hanko>
Rendered body type: text/plain

On Aug 8, 3:08pm, Karl F. Larsen wrote:
> Subject: [NETSIG:1863] Re: Diodes, or better?

<deletia>

>   Hank, a few years ago the hams in Tucson put a *REAL* computer at
> their 9000 foot radio site with the then current g8bpq switch software.
> It was a year before they got it working properly. The problems were
> power glitches that sent the puter into no-no land, lightning that blew
> up the power supply, ect. So it's not the same as we both have at home.

Can we characterize these different sites?

Might be good info to know what the sites are like where PCs
have worked, and where they have failed.

To date, all our sites with PCs are at people's homes: reasonably
well controlled environment, commercial power, phone line available.
We see failures (defined as "a human has to do something") very
seldom, perhaps 2 times per year max. We have done nothing special
at these sites, aside from Isobar or UPS power protection, normal
lightning protection for the antennas/feedlines, etc. We have no
"catatonia" watchdogs so a failure includes system lockup as well
as "total system crash it didn't even reboot". Most of these systems
are at locations that would normally be considered for remote (e.g.
mountain) sites: key ridge tops for cross ridge linking, key hills
for wide area valley coverage, and key "just below the ridge top"
for long haul "down to the other end of the valley" links. We have
been very lucky to find cooperative hams in the locations we wish
to use. Many of them have become "packet fanatics" and a few have
become bbs sysops. Most were not on packet when we approached them.

The experiment we will undertake later this year involves a mountain top.
It's a small mountain, 3500 above the surroundings, but is a key link
between Portland and Seattle, and carries a heavy traffic load. There
is a "good" road to the site, so it will not be too difficult to experiment.
The site presently uses a Data Engine and has five radios, two (or three,
I've lost track) are 9600 baud links, the remainder are 1200 baud.
The site has backup power with auto-cutover, and has glitched the tncs
or data engine only twice in 5 years.

One factor that makes this a viable solution here in the PNW is the
lack of thunderstorms. Lightning activity is rare (when we do have
a thunderstorm, the evening news may well show video of the lighting,
for those who happened to miss it ...) Another factor which helps us
is the climate. It can get hot in the summer (100 - 105 is not
unusual) it does not get very cold in the winters. A few degrees
below freezing is a normal "years low temp".

So perhaps it is the mild climate and lack of lightning that makes
it reasonable to consider PCs for remote sites here.

What exerience have other parts of the country had with them?

I'm aware of one site in the SE that has run a remote PC, perhaps
someone can comment on that experience.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

35. Re: [NETSIG:1862] When it's hot...

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 8 Aug 1995 17:00:57 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9508081637.F7149-0100000@gateway.utilpart.com>
Rendered body type: text/plain

As to the QTH data, we finally gave up on grid squaires here and put in
the lat lon data, in many cases there were more than one switch stack in
the same square, and as a result when a user got the info on those switches
they got the same QTH data. Now they can see down to the minute where the
switch is located.

Put the quietus on those snakes, skin 'em and put 'em in the pot, that is
good eats, no use letting good snake get away!!

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

36. Re: [NETSIG:1864] Re: Diodes, or better?

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 8 Aug 1995 17:52:36 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950808174835.14348A-100000@acca>
Rendered body type: text/plain

On Tue, 8 Aug 1995, Hank Oredson wrote:

> On Aug 8, 3:08pm, Karl F. Larsen wrote:
> > Subject: [NETSIG:1863] Re: Diodes, or better?
>
> <deletia>
>
> One factor that makes this a viable solution here in the PNW is the
> lack of thunderstorms. Lightning activity is rare (when we do have
> a thunderstorm, the evening news may well show video of the lighting,
> for those who happened to miss it ...) Another factor which helps us

       Hank when we have a rain (rare) the lightning that comes with it
knocks out all the tv stations so no news is common! Also knocks out the
power at home so we go to the front porch and watch the rain and get cold.

> is the climate. It can get hot in the summer (100 - 105 is not
> unusual) it does not get very cold in the winters. A few degrees
> below freezing is a normal "years low temp".
>
> So perhaps it is the mild climate and lack of lightning that makes
> it reasonable to consider PCs for remote sites here.
>
> What exerience have other parts of the country had with them?
>
> I'm aware of one site in the SE that has run a remote PC, perhaps
> someone can comment on that experience.
>
>   ... Hank
>
>
> --
>
> Hank Oredson @ Mentor Graphics   Library Operations
> Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"

> Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
>
-karl

37. PC on a hill

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Tue, 08 Aug 1995 19:46:13 -0700
To: netsig@tapr.org
Message-ID: <199508090259.VAA21525@sys1.tapr.org>
Rendered body type: text/plain

Here in SE Aridzona there are two G8BPQ nodes in service. Both are mtn top sites and are running on XT clones. I don't recall the problems with them being quite as troublesome as Karl mentioned. The 9100 ft LMN node (overlooking Tucson) went into commision first, back around 1989/90 or so. It was found that very short power glitches would require a manual RESET of the PC power supply. This happened only a couple of times over a period of several months, but someone figured out a solution and that took care of it. It's my recollection that the original XT is still perking along. Think it operates without monitor, keyboard and hard drive. It's my sense that the maintenance problems have been associated with antennas, TNCs and radios, and no more so than anything else.

The second site is on White Tanks Mtn (near Phoenix)and hasn't done as well. Seems I recall lighting took out the original XT as well as the radios and TNCs. Dan, N7MRP has this site and can provide a better history than I.

The original configuration on both sites was a 1200 baud 2M frequency and a 9k6 backbone trunk between them on 220. This is the prime BBS forwarding circuit between Phoenix and Tucson. The XT's handled this combination OK.

XTs are starting to show up pretty inexpensively on the used market. I've seen them locally from $50 to $100+ depending upon whether they have hard drives and color monitors with them. These are operational with keyboard, monitor and at least 1ea 360K floppy.

I'm not sure what the limitations would be using an XT with BPQ and his multi-drop KISS system. For a moderately busy 3-4 node stack, this combination may be reasonably cost effective. While overall vulnerability is higher than separate TNCs should the computor die, probably not more so than any other centrally controlled node switch.

The greatest reliability would be from having the computer power be obtained off a battery float. The XT supply requirments are not too stiff, when in a minimal configuration.

73 de Jack

38. Re: [NETSIG:1864] Re: Diodes, or better?

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Tue, 08 Aug 1995 21:55:40 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HTUFOYJVNQ90NNEH@tntech.edu>
Rendered body type: text/plain

> What exerience have other parts of the country had with them?
> I'm aware of one site in the SE that has run a remote PC, perhaps
> someone can comment on that experience.

We are running a PC on a mountaintop site near Crossville Tennessee. The PC is running DOS and JNOS and it has a hard disk, one PI2 card (1200 b/s and 56 kb/s) and one TNC2 (9600 b/s). The building is good and has a small space heater in it so the wintertime temperature does not get too low (we don't know how cold it gets - a project for later is to add indoor and outdoor temperature sensors).

Lightning has not been a problem...yet. When more funds are available the lightning protection will be strengthened, but right now if it took a direct hit it would probably be toasted.

Power is moderately reliable except in storms, which we seem to get a lot of around here. The AC power to the computer goes through a switch controlled by touch tones on one of the packet frequencies so that we can remotely turn it off and on again. Unfortunately, the BIOS has something strange in it that makes it pause and display
   Press <F1> to continue
occasionally when the power is cycled. We plan on replacing the entire computer with another one with Linux and JNOS/Linux or TNOS soon so we

haven't pursued the problem. Other than that we haven't noticed any
hardware or software problems.

The software is configured so that a remote exit, using the NOS remote
command, restarts NOS. The autoexec.nos file is also divided into two
files, one the normal startup file and the other a short file which is
called by the first. This allows the remote sysop to FTP minor changes to
the system with little danger of causing a software lockup. We were
considering a more sophisticated technique of having old files kept around
and automatically copies on reboot but don't think that it is necessary.
Major configuration changes are made at the site or just before a planned
visit, just in case something goes wrong. The system does not have BBS or
converse functions enabled. We plan on enabling at least local (no links)
converse later on.

I am told that in Georgia they have been running PCs for some time except
that they do not use hard disks.

Jeff, k9ja
+-+
Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
(615) 372-3485 | Cookeville Tennessee 38505   U.S.A.

39. Re: [NETSIG:1864] Re: Diodes, or better?

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Wed, 9 Aug 1995 09:50:47 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9508090903.A14280-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Living in Florida is learning to live with lighting, particularly if you
live as I do in the Tampa bay area, for those of you who perhaps have not
seen a map plot of lightning discharges per year, the Tampa Bay area has
the highest hit rate of any part of the country. My breaker box and wall
sockets atest to this as do several bits and pieces of equipment that have
seen the repair bench many times due to lightning.

I have seen computers, TNC's radios and other equipment totally destroyed
in the pass of the common summer thunderstorms that we have in this area.

I also lived in Costa Rica for 14 years, sysop'ed ti0paq from 1985 to 1991
and during that period only lost the computer once to lightning, Costa Rica
has a similar situation to Tampa, very high lightning discharge rates.

We found that by proper grounding and UPS protection we were able to keep
ti0paq up and running at a remote site with no problems for many years, only
suffering the one discharge that took out the mother board.

The same discharge also took out two TNC's. The TNC's are more rugged in
general than the PC, but proper encasement and power supplies will take care
of most of the problems.

My general experience with lightning damage has shown that 90% of the time
the discharge enters through the POWER LINES and not thru the antenna as
most would think, this maybe due to the care we have always taken in makeing
sure that all the antenna parts were properlly grounded, or general run of
luck, but my greatest problem is and has been through the power lines.

In one case I remember at Cerro La Muerte in Costa Rica, this was a 3,500m
mountain top, we took a discharge to the power lines somewhere close by, we
did not find out about it until about 2 weeks later when the batteries
discharged. Upon investigation we found that the pole transformer had
litterally been blown off of the pole and lay in bits and pieces all around
the repeater shack, as it was, several other repeater sites had lost repeater
equipment due to the same discharge, we lost nothing, but our site was a
totally metal buiding, all equipment inside was grounded, and we had elbow
connectors on every antenna connector with a few turns of coax prior to
entry into the equipment (old avionics trick, seems the lightning jumps
across the elbow to ground rather than going negociating the elbow connector
and the few turns of coax). We had gas discharge protectors on both legs of
the 220 power entering the building, and then each 110 let had gas protectors
scattered around INSIDE the building.

All that the books say about grounding, it is true, you follow it and you
will avoid a lot of anguish later on, you disregard it and your whole system
becomes one great discharge point for mother nature.

Having used both TNC's and PC's in very very rough lightning
environments, I can tell you that you can use both, but you must take the
right precautions.

I personally prefer digital repeaters, if you use a voice repeater a
device which has, if properly been built, been hardened to a greater degree
against ElectroStatic Discharge, therefore it's survival is better assured
than that of your average radio. And for a digital repeater you only need
the digital regenerator interface, a single card or TNC which is very easy
to harden against lightning, the PacComm Spirit comes with filtering and
protection against much ESD problems.

Other TNC's maybe equally hardened with a small bit of parts. The digital
regenerator will take a much harder hit and probably keep on trucking.
Then you can put your switch facilities down in sites where the ESD is NOT
such a great problem.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:Costa Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

40. [NETSIG:1855] Re: Diodes or better...

From: jkbe@aloft.att.com (John_Bednar)
Date: Wed, 9 Aug 95 07:43:23 EDT
To: netsig@tapr.org
Message-ID: <9508091143.AA02454@zeus>
Rendered body type: text/plain

> From: wb9mjn@uugate.wa7slg.ampr.org
> Hi,
> The diodes between NETROM TNC s works ok, but it does represent significant
> Delay. If u are running two 9600 baud NETROM s, in a stack of three or
> more TNC s, the delay can respresent as much, and many times more delay
> than the radio path.
Maybe I have overlooked something but I can not see why the matrix
time could exceed the radio path time. I`m assuming one would not set the
RS232 rate less than the radio port rate and that the matrix is in good working
order (normal conditions).

> Additionally, when running 3 or more tncs in a stack, the action of the
> automatic router, will cause looping routes. When a path dies out on the
> RF side, the router will end up causing the route to go each of the nodes
> in a stack of three or more.
This has been solved with the "node broadcast algorithm port control" in X1J. No
need to spend the effort with the star technique (good idea) or put up
with the looping problems. Thanks goes to Dave the X1J author!

On the Coax-Lan / Matrix issue:
I believe the Coax-Lan addresses the loading issue that we face with
diode matrix and the physical distances that can be placed between TNC's in
the node stack. Collisions can still occur on the Coax-Lan because the coax
supports by-directional communications like the diode matrix. For an identical
stack of TNC's that's 6 or less and identical RS232/CoaxLan speeds,
the performance of the matrix and Coax-Lan interfaces should be similiar.
If one is faster, it will be the diode matrix solution
because the Coax-Lan driver is gated off by an RC time constant. This
can not be as accurate as the logic solution in the diode matrix especially
at the RS232 rates above 9600 baud.

The matrix loading issue is real and I have heard of people having
problems with fewer than 6 tnc's in a matrix. Sometimes it can be traced
to a poorly designed RS232 interface in the TNC, sometimes to a leaky diode

or path.

I expect the original poster should base the choice of Coax-Lan vs. Diode Matrix
on the number of TNC's you expect to put in the stack, the distances between
TNC's, and the cost.

John, WB3ESS

41. Re: [NETSIG:1864] Re: Diodes, or better?

From: jra@ag9v.ampr.org
Date: Wed, 9 Aug 1995 07:53:08 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199508091153.HAA10046@ag9v.ampr.org>
Rendered body type: text/plain

You (Hank Oredson) write:
>
>Can we characterize these different sites?
>
>Might be good info to know what the sites are like where PCs
>have worked, and where they have failed.

[deletia of good stuff]

>What exerience have other parts of the country had with them?
>

Here in the midwest, where a "mountain" is a 120 foot tall water tank,
we've not had much trouble with the one remote PC we've used. We ended
up putting a timer on to reboot the whole system every night, but that was
because of a flaky radio power supply that tended to crowbar for no reason.

We also have a bunch of data engines running at remote sites (typically
underneath 300-500 foot towers in the middle of cornfields) and have had
no lightning or similar problems.

We do have a fair amount of lightning here, though certainly nothing like
a mountaintop in the SW...

John
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

42. Efficient Reliable Group Communication for Distributed Systems

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 9 Aug 1995 14:59:08 -0500 (CDT)
To: bbssig@tapr.org (BBS SIG mailing), netsig@tapr.org (NETSIG mailing)
Cc: hg@n2wx.mpcs.com (Howard Goldstein)
Message-ID: <199508091959.OAA24761@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Dirk-Jan Koopman has asked us to make the following PS file available on
ftp.tapr.org. It has been placed in tapr/general in the ftp area.
This is an excellent paper.

Date: Wed, 9 Aug 1995 11:05:40 +0100 (BST)
From: Dirk-Jan Koopman <djk@dirku.demon.co.uk>

group.ps.gz contains a postscript file on:

Efficient Reliable Group Communications for Distributed Systems

M. Frans Kaashoek
MIT Laboratory for Computer Science
Cambridge, MA

Andrew S Tanenbaum
Dept of Math and Comp Science
Vrije Universiteit
Amsterdam, The Netherlands

Abstract
Many applications can profit from broadcast communication, but few operating
systems provide primitives that make broadcast communicationsd available to
use applications. ...

--
Dirk-Jan Koopman   Tel/Fax: +44 1362 696076 Mobile: +44 973 333806
Computer Consultant   Email: djk@dirku.demon.co.uk or G1TLH@GB7TLH.#35.GBR.EU
"The typewriting machine, when played with expression, is no more annoying than
the piano when played by a sister or near relation." --Oscar Wilde

43. Re: [NETSIG:1870] Re: Diodes or better...

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Wed, 9 Aug 1995 12:31:22 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9508091213.E14280-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Another option for switch/node stack operations is Tom Moulton's RS-232
lan, this device basicly gates the RS-232 lines and inter-connects them
giving the needed buffering, the boards come with 4 ports, and there is
a way to connect boards such that you can increase the number of by four
each time you add a board.

This device neither suffers the fanout problem of the diode matrix nor
the slight delay at the end of a data block as occures on the COAXlan,
though when I did the COAXlan, I was able to set the RC such as to only
hold off for about 3 characters time. I have not checked latelly to see
what it is set to. You can change that constant and optimize it for the
speed of your wire lan.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

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mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

44. PC on a Mountain Story

From: Victor Kean <VKEAN@csi.compuserve.com>
Date: 09 Aug 95 13:01:26 EDT
To: netsig <netsig@tapr.org>
Message-ID: <CSI_6136-72727@CompuServe.COM>
Rendered body type: text/plain

The Central Ohio Packet Association (COPA, %Bob Adams, W8BKO, 1812
Sandalwood Place, Columbus, OH 43229; for TAPR's list) ran a IBM PC
based node on an Ohio mountain (hill, everywhere else) for a while,
around 1990-1993. This was the ALMA node, for those list members in
Ohio.

We used an old (first model) IBM-PC with a battery backed "in the
case" power supply, 2 DRSI cards, 2 1200 baud radios, and a 4800 baud
radio, all connected to antennas on a 300' tower. The antenna
feedlines were grounded where the lines came off the tower.

We isolated the node from the real world with Polyphasor lightning
arrestors and a Isobar surge suppressor, all mounted on an aluminum
panel between the node stuff and the outside. The aluminum pnael was
grounded to the building ground with very fat braid. So,
theoretically, our node had decent lightning protection.

That theory was tested once. The system was struck by lightning
which vaporized the MOVs in the Isobar, and tripped the circuit
breaker which powered the equipment. After the batteries ran down,
the system crashed. The fix was a free replacement Isobar box, and
a trip to the hill to reset the circuit breaker (not necessarily in
that order).

The only other outage we had was caused by an irate site

administrator when he discovered the soldering iron I left (hot) on
the concrete floor. He disconnected the AC power and the 12 volt RV
battery that backed up the radios, again stressing the NiCads in the
PC power supply.

The site was closed down when the irate site administrator became
annoyed at us for an undisclosed reason and demanded we leave.

The only other problem with the remote PC was the tendenancy for the
floppy diskettes (no hard drive) to warp after a few months, so they
couldn't be used again when the time came to upgrade the software.
The budget didn't warrent locating 3.5 inch floppy drives.

We didn't keep a monitor on site for space reasons, which was not a
problem, since there isn't anything to look at with BPQ running
anyway. All the software fit on a single 360k floppy. I nearly
always brought a monitor anlong for software upgrade visits. I
managed to perfom one upgrade without a monitor by typing very
carefully, and thinking very hard about what the computer might have
been saying.

As a proof of PC based node usage in the field, the project was a
success. A battery backed supply or UPS is highly recommended.

 - Vic
K1LT @ W8CQK.#cmh.oh.usa.noam
vkean@csi.compuserve.com

45. Re: [NETSIG:1867] PC on a hill

From: mark@tetherless.com (Mark Oppenheim)
Date: Wed, 9 Aug 1995 10:08:36 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199508091708.KAA27367@gorgor.pa.tetherless.com>
Rendered body type: text/plain

At 12:02 AM 8/9/95 -0500, Jack Taylor wrote:
>Here in SE Aridzona there are two G8BPQ nodes in service. Both are mtn top
>sites and are running on XT clones. I don't recall the problems with them
>being quite as troublesome as Karl mentioned. The 9100 ft LMN node
>(overlooking Tucson) went into commision first, back around 1989/90 or so.
>It was found that very short power glitches would require a manual RESET of
>the PC power supply. This happened only a couple of times over a period of
>several months, but someone figured out a solution and that took care of it.
>It's my recollection that the original XT is still perking along. Think it
>operates without monitor, keyboard and hard drive. It's my sense that the
>maintenance problems have been associated with antennas, TNCs and radios,
>and no more so than anything else.

(the rest omitted)

There are a few choices that you can make:

1) Get an electronic timer from Intermatic. This offers something like 42
events over a week's time, with events as short as a minute. You can
schedule 1 minute "resets" by programming power to go out every "x" hours
should a failure occur.

2) If you have a co-located voice repeater, or can hang a control radio on
it, connect a DTMF (or TAPR METCON?) controller to the computers reset line.
You then can manually reset the computer.

3) There are a few products that are add-on ISA-bus "watchdog" timers.
Usually they require a TSR to load, and if the card does not see it being
polled at the required times, it re-boots the computer.

4) The last and most expensive solution is to get an industrial PC, or go to
one of the PC104 boards (a stackable imbedded PC design) that features it's
own watchdog timer, and is designed to work in "non-PC" applications.

Mark
KD6KQ

46. [NETSIG:1867] PC on a hill -Reply

From: Orville Beach <Orv@micom.com>
Date: Wed, 09 Aug 1995 10:43:06 -0800
To: netsig@tapr.org
Message-ID: <s0289184.046@micom.com>

Rendered body type: text/plain

We run a G8BPQ switch on a 2200' hill in central
Ventura County. It's been in service almost 5
years. It has 4 DLC channels (DRSI) - 2 at 1200
baud, one at 4800 baud and one at 9600 baud.
(1200=user channels; 4800 & 9600 are trunks).
Additionally it has a COM port driving a KISS TNC
driving a full-duplex 1200 baud 220 repeater.

It started as a 286, then over the years went to a
386sx, and was recently upgraded to 486/33 with a
couple Megs of RAM. That's in preparation for
upgrading it to TNOS/LINUX.   (although it has no
HD and not enough RAM in it right now).

We can do that because the weather is relatively
benign. We've had antennas taken out from icing
and wind more often than problems with lightning.

The power on the site is glitchy though, even to
the point of occasionally clobbering CMOS. We
added a CVT, then a remote reset from an adjacent
2m repeater, then a UPS between the switch and the
CVT. The site has a backup generator, but it takes
it about 10 seconds to come up to speed, so that's
why the UPS.

Hope that helps.

73 - Orv - wb6wey
orv@micom.com

47. Re: [NETSIG:1864] Re: Diodes, or better?

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Wed, 9 Aug 1995 11:57:07 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0sgFNO-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
> On Aug 8, 3:08pm, Karl F. Larsen wrote:
> > Subject: [NETSIG:1863] Re: Diodes, or better?
>
> >   Hank, a few years ago the hams in Tucson put a *REAL* computer at
> > their 9000 foot radio site with the then current g8bpq switch software.
> > It was a year before they got it working properly. The problems were
> > power glitches that sent the puter into no-no land, lightning that blew
> > up the power supply, ect. So it's not the same as we both have at home.
>
> Might be good info to know what the sites are like where PCs
> have worked, and where they have failed.
>
> To date, all our sites with PCs are at people's homes: reasonably
> well controlled environment, commercial power, phone line available.

Changing our whole concept of packet networking would, IM!HO, change
things for the best.

The current scheme has multiple TNC's, radios, antennas, and frequencies at
a remote, usually hard to access location with extreme weather conditions.
At least the extreme weather part applies in Montana.

Changing that to a single, much simpler, regenerating repeater on a single
channel would (I believe) improve the reliability and performance of the
system. Then folks could use PC's or node stacks in their easily accessable
and far less severe home environments (ie. garage or closet) to link the
repeaters and to provide local access channels.

>   ... Hank

Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

48. FW: (fwd) FlexNet for digipeaters (fwd)[D[D

From: jra@ag9v.ampr.org
Date: Thu, 10 Aug 1995 17:17:42 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199508102117.RAA14239@ag9v.ampr.org>
Rendered body type: text/plain

Here's a message passed on to me by Barry, WA0RGT. Flexnet looks like an interesting concept. Anyone know enough to start a thread about whether it's worth considering it for use in the US, now that a PC version is available?

John

From: ebertrem@infracom.gatelink.fr.net (Eric Bertrem)
Newsgroups: rec.radio.amateur.digital.misc
Subject: FlexNet for digipeaters
Message-ID: <gate.eTVH0c1w165w@infracom.gatelink.fr.net>
Date: Mon, 07 Aug 95 23:06:25 +0100
Reply-To: ebertrem@infracom.gatelink.fr.net
Distribution: world
Organization: INFRACOM (Gatelink)
News-Software: Relay System Mail v1.5B
Lines: 70

FlexNet, a solution for digipeaters

Have you ever heard about RMNC/FlexNet and PC/FlexNet systems ? The first one runs with 6809 based cards, the second one on any PC compatible computer (XT or even better 386).

The software has been written by Gunter Jost, DK7WJ @ DB0GV. It has many interesting capabilities, such as :

 . automatic router : no more broadcasts (The Net), no static routing
                      (Rose / Fpac) ! The whole network is known on any
                      digipeater and is displayed in DESTINATIONS routes.

 . up to 15 radio channels on a PC/FlexNet + 1 used to interface with
   programs running on the same computer, as TSR for example.

 . any hardware can be used :

        . serial 1k2 Baycoms modems
        . Centronics 9600 Baud FSK Baycom modems (PAR96)
        . BayCom USCC cards (2, 4, or 8 channels, depending on the model)
        . Ethernet cards
        . Sound Blaster cards
        . KISS interface on COM ports (for PC-to-PC links, not for TNCs)
        . Texas Instrument DSP kit
        . SCC cards (not yet available, but soon)

          etc...

If you don't find *your* card, a driver kit is available : you can program your own interface !

. A "service interface" allows the use of remote DOS commands (sysop only)
   and offers a watchdog function : if your PC hangs, it restarts
   the digipeater.

. FlexNet uses auto-parameters : Persist, Maxframe and few other parameters
   get values according to the trafic on each radio channel.

. User friendly interface : no more "phone numbers" (Rose) or out-of-range
   routes :

      C W1AAA WA7MMM is enough to connect your friend 500 miles from home!
        ----- ------
          !   !------> output digi
          !------------> callsign of your correspondent

. an IP router should be available soon, but at this moment, IP frames can
   be sent via the FlexNet network.

There are many other interesting features, but a bulletin wouldn't be long enough :-)) At this moment, I have an English translation of the PC/FLEXNET French documentation (home made, WORD 6 format only).

If you're interested, just send me an email, I'll send it UUEncoded.

I'm also looking for people who help me translating German / French into
English, or simply correct my mistakes.

I forgot : FlexNet is FREE, it has no commercial purpose and can only be
used on a ham-radio basis.

Vy 73s.

Eric BERTREM / F5PJE

Email : ebertrem@infracom.gatelink.fr.net

49. Re: [NETSIG:1875] Re: PC on a hill

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Thu, 10 Aug 1995 23:13:35 +0200
To: netsig@tapr.org
Message-ID: <199508102112.XAA01306@unix10.pressimage.fr>
Rendered body type: text/plain

Hi,

>3) There are a few products that are add-on ISA-bus "watchdog" timers.
>Usually they require a TSR to load, and if the card does not see it being
>polled at the required times, it re-boots the computer.

I will Email to those requiring it a file containing 2 different watchdog
like this, designed by hams.
Please specify UUencode or MIME.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
       > F1JKJ@planete.net <   Public Key on mail servers
         Fidonet 2:323/27.1
         Compuserve ID 100407,436

50. Re: [NETSIG:1878] FW: (fwd) FlexNet for digipeaters (fwd)[D[D

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 10 Aug 95 16:37:25 PDT
To: netsig@tapr.org
Message-ID: <9508101637.ZM21195@hanko>
Rendered body type: text/plain

On Aug 10, 5:03pm, jra@ag9v.ampr.org wrote:

> There are many other interesting features, but a bulletin wouldn't be long
> enough :-)) At this moment, I have an English translation of the PC/FLEXNET
> French documentation (home made, WORD 6 format only).
> If you're interested, just send me an email, I'll send it UUEncoded.
>
> I'm also looking for people who help me translating German / French into
> English, or simply correct my mistakes.
>
> I forgot : FlexNet is FREE, it has no commercial purpose and can only be
> used on a ham-radio basis.

I'm interested in the docs, and a pointer (ftp site?) to the code.

Perhaps post the docs here, if not "too" long (100k?)

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

51. Re: [NETSIG:1879] Re: PC on a hill

From: Bob Nielsen <nielsen@primenet.com>
Date: Fri, 11 Aug 1995 09:53:07 -0700 (MST)
To: Laurent Ferracci - F1JKJ <f1jkj@planete.net>
Cc: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.950811095144.92B-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

On Thu, 10 Aug 1995, Laurent Ferracci - F1JKJ wrote:

> Hi,
>
> >3) There are a few products that are add-on ISA-bus "watchdog" timers.
> >Usually they require a TSR to load, and if the card does not see it being
> >polled at the required times, it re-boots the computer.
>
> I will Email to those requiring it a file containing 2 different watchdog
> like this, designed by hams.
> Please specify UUencode or MIME.

Laurent, if you send me a copy (uuencoded), I will place it (binary) on
the tapr server, ftp.tapr.org so that others can get a copy there.

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen   AX.25: w6swe@wb7tpy.az.usa.noam

52. Re: [NETSIG:1881] Re: PC on a hill

From: MPFahmie@lbl.gov (Mike Fahmie)
Date: Fri, 11 Aug 1995 13:50:37 -0700
To: netsig@tapr.org
Message-ID: <199508112050.NAA15657@mh1.lbl.gov>
Rendered body type: text/plain

>On Thu, 10 Aug 1995, Laurent Ferracci - F1JKJ wrote:
>
>> Hi,
>>
>> >3) There are a few products that are add-on ISA-bus "watchdog" timers.
>> >Usually they require a TSR to load, and if the card does not see it being
>> >polled at the required times, it re-boots the computer.
>>

There are solutions that do not involve adding hardware. I have a TSR
program that periodically examines the display and will cause a reset when a
specified time passes without a change in the display. You point it to the
exact point on the display to be examined and you specify the time period.
If the time of day is displayed at a hard location on the screen, thats a
good place to point the watchdog. This software solution is not
bulletproof, if the processor freezes up and refuses to process interrupts
then you're in trouble, but it does catch a very large percentage of crashes.

I don't remember where I found it, it may be part of the W1NPR collection.
It lives in an 8K zipped file and I'll be happy to send it out on request.

-Mike-

Mike Fahmie - WA6ZTY @ N6EEG - MPFahmie@lbl.gov
Advanced Light Source - Lawrence Berkeley Laboratory

53. Re: [NETSIG:1882] Re: PC on a hill

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 11 Aug 95 16:09:58 PDT
To: netsig@tapr.org
Message-ID: <9508111609.ZM23880@hanko>
Rendered body type: text/plain

On Aug 11, 5:40pm, Mike Fahmie wrote:
> Subject: [NETSIG:1882] Re: PC on a hill
> >On Thu, 10 Aug 1995, Laurent Ferracci - F1JKJ wrote:
> >
> >> Hi,
> >>
> >> >3) There are a few products that are add-on ISA-bus "watchdog" timers.
> >> >Usually they require a TSR to load, and if the card does not see it being
> >> >polled at the required times, it re-boots the computer.
> >>
>
> There are solutions that do not involve adding hardware. I have a TSR
> program that periodically examines the display and will cause a reset when a
> specified time passes without a change in the display. You point it to the
> exact point on the display to be examined and you specify the time period.
> If the time of day is displayed at a hard location on the screen, thats a
> good place to point the watchdog. This software solution is not

> bulletproof, if the processor freezes up and refuses to process interrupts
> then you're in trouble, but it does catch a very large percentage of crashes.
>
> I don't remember where I found it, it may be part of the W1NPR collection.
> It lives in an 8K zipped file and I'll be happy to send it out on request.

This probably counts on DOS still responding properly to the
hardware timer tick (and thus generating INT 8 or INT 1A),
and the timer tick actually occuring. Any mechanism that counts
on something done by software will miss catching some failures.

The good thing about an external device is that it can be independent
of any software or hardware failures in the PC. I've seen a simple
NE 555 timer plus solid state relay that drops power for a couple
minutes every day, thus causing the PC to reboot ...

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

54. Re: [NETSIG:1882] Re: PC on a hill

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. AG0N)
Date: Fri, 11 Aug 1995 23:40:59 +0000
To: netsig@tapr.org
Message-ID: <9508112337.AA24413@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

>There are solutions that do not involve adding hardware. I have a TSR
>program that periodically examines the display and will cause a reset when a
>specified time passes without a change in the display. You point it to the
>exact point on the display to be examined and you specify the time period.
>If the time of day is displayed at a hard location on the screen, thats a
>good place to point the watchdog. This software solution is not
>bulletproof, if the processor freezes up and refuses to process interrupts
>then you're in trouble, but it does catch a very large percentage of crashes.
>
>I don't remember where I found it, it may be part of the W1NPR collection.
>It lives in an 8K zipped file and I'll be happy to send it out on request.
>
>-Mike-

Don't know about anyone else, but I would like to add that to my collection
of goodies. If you don't post it for everyone, please uue it and send a
copy to my address below.   THANKS!

Gary McDuffie, Sr. - AG0N
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM

55. Re: [NETSIG:1883] Re: PC on a hill

From: Bob Nielsen <nielsen@primenet.com>
Date: Fri, 11 Aug 1995 22:17:23 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.950811221419.163E-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

On Fri, 11 Aug 1995, Hank Oredson wrote:

>
> The good thing about an external device is that it can be independent
> of any software or hardware failures in the PC. I've seen a simple
> NE 555 timer plus solid state relay that drops power for a couple
> minutes every day, thus causing the PC to reboot ...
>

I have found that an Intermatic 'clock motor' timer works quite
successfully. Surges do not affect it one bit. The only problem is that
the minimum off time is 15 minutes or so. I have it set to go off at
4:30 am on a remote node. It sure helps during the summer thunderstorm
season (which finally arrived today--about 6 weeks late).

Bob

```
-----------
Bob Nielsen                         Internet: nielsen@primenet.com
Tucson, AZ                          AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen    AX.25: w6swe@wb7tpy.az.usa.noam
```

56. Re: [NETSIG:1874] PC on a Mountain Story

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sat, 12 Aug 1995 05:20:22 -0600 (MDT)
To: Victor Kean <VKEAN@csi.compuserve.com>
Cc: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950812051501.8761B-100000@acca>
Rendered body type: text/plain

Victor I loved your story and sorry the site administrater got
mad and tossed you out. My bet is he needed the tower space your ham
antenna's occupied. I have the ORIGINAL Compact luggable computer which
has DUAL 360k floppy drives and 512k ram! It will die at 10,000 feet amsl
running the g8bpq switch.

```
 ****************************************************************************
 *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
 *                                                                           *
 *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet      *
 *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12     *
 *                                                                           *
 *        Electrical Engineer with the Army Research Laboratory              *
 *                                                                           *
 ****************************************************************************
```

57. Re: [NETSIG:1886] Re: PC on a Mountain Story

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. AG0N)
Date: Sat, 12 Aug 1995 13:16:25 +0000
To: netsig@tapr.org
Message-ID: <9508121312.AA16183@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

>   Victor I loved your story and sorry the site administrater got
>mad and tossed you out. My bet is he needed the tower space your ham
>antenna's occupied. I have the ORIGINAL Compact luggable computer which
>has DUAL 360k floppy drives and 512k ram! It will die at 10,000 feet amsl
>running the g8bpq switch.

Hmm...this reminds me... Has anyone ported bpq over to cp/m? I have a
"perfectly good, like new" cp/m machine in the back room, still hooked up
and working. Needs a home! Dream on!

```
Gary McDuffie, Sr. - AG0N
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM
```

58. Re: [NETSIG:1879] Re: PC on a hill

From: Bob Nielsen <nielsen@primenet.com>
Date: Sat, 12 Aug 1995 12:41:12 -0700 (MST)
To: Laurent Ferracci - F1JKJ <f1jkj@planete.net>
Cc: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.950812123941.96A-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

On Sat, 12 Aug 1995, Laurent Ferracci - F1JKJ wrote:

>
> >> I will Email to those requiring it a file containing 2 different watchdog
> >> like this, designed by hams.
> >> Please specify UUencode or MIME.
> >
>
This file has been place on ftp.tapr.org in /tapr/general/watchdog_timers.zip

```
-----------
Bob Nielsen                         Internet: nielsen@primenet.com
Tucson, AZ                          AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen    AX.25: w6swe@wb7tpy.az.usa.noam
```

59. Re: [NETSIG:1885] Re: PC on a hill

From: jra@ag9v.ampr.org
Date: Sat, 12 Aug 1995 19:45:05 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199508122345.TAA20300@ag9v.ampr.org>
Rendered body type: text/plain

You (Bob Nielsen) write:
>
>On Fri, 11 Aug 1995, Hank Oredson wrote:
>
>>
>> The good thing about an external device is that it can be independent
>> of any software or hardware failures in the PC. I've seen a simple
>> NE 555 timer plus solid state relay that drops power for a couple
>> minutes every day, thus causing the PC to reboot ...
>>
>
>I have found that an Intermatic 'clock motor' timer works quite
>successfully. Surges do not affect it one bit. The only problem is that
>the minimum off time is 15 minutes or so. I have it set to go off at
>4:30 am on a remote node. It sure helps during the summer thunderstorm
>season (which finally arrived today--about 6 weeks late).
>
>Bob

We've had good luck with a cheap Radio Shack digital timer that dumps the
whole system (computer and radios) at about 2:00AM for one minute.

John

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

60. RE: [NETSIG:1862] When it's hot...

From: bobsmith@mail.i2020.net (Robert L. Smith)
Date: Sun, 13 Aug 95 08:51:52 EDT
To: netsig@tapr.org
Message-ID: <Chameleon.950813085849.bobsmith@>
Rendered body type: text/plain

-- delete some --
>
>I'm wishing that folks would follow the APRS convention and put the
>6 digit Grid Square Identifier in the Info message.   That would make
>it far easier to have a feel for where the node was at. Is there any
>sort of APRS convention for noting the elevation of a system? Maybe
>something like: [DN48ar3600] would work?
>

I suggest the ICAO flight altitude convention of noting in 100' increments
above mean sea level. Thus, your example would become DN48ar36
saving the extraneous zeros.

For purposes of quick and dirty route studies, 100' foot increments would
be fine.

 -- more delete --

>73's
>
>Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
>Reply-To: vodall@bigsky.dillon.mt.us
>Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>

  Robert L. Smith   804/745-1065   bobsmith@i2020.net
  Smith Machine Works, Inc.   wa4ypv@w4za.ampr.org

61. Re: [NETSIG:1889] Re: PC on a hill

From: bewhite@ibm.net
Date: Mon, 14 Aug 95 17:06:40
To: netsig@tapr.org
Message-ID: <9508150013.LR0021@localhost>
Rendered body type: text/plain

A Rose switch site on Mt Canobolas near Orange in N.S.W. had a similar problem to what is being described here. Instead of doing a reset of everything whether it was needed or not, they fitted a 555 timer with its input from the PTT lines of the DR200. If it didn't see the PTT operate for about 15 minutes it pulled up a relay and removed power for about 15 seconds.

I visited the site once and was interested to read a sign which said beware of falling ice. The shack was under a TV station tower.

73
Barry White
bewhite@ibm.net
VK2AAB @ VK2AAB.NSW.AUS.OC

62. Re: Diodes or Better.

From: wb9mjn@uugate.wa7slg.ampr.org
Date: Mon, 14 Aug 95 13:24:34 mst
To: netsig@tapr.org
Message-ID: <1607@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

Hi, John, WB3ESS wondered how the matrix delay can be longer than the channel delay. The matrix run at 9600 baud as well. If the loading on the other paths in the matrix, or due to looping between nodes of the matrix, is greater than the radio channel , the delay will be greater. Both are CSMA channels. The looping can drive the matrix CSMA channel into saturation, while the radio channel is operating well out of saturation. Additionally, there is process delay in the TNC s. Thus the delay thru the node stack can easily, under the right circumstances exceed a 9600 baud channel delay. I ve seen this in practice. It occures whenever a bad route is decaying out, and somebody attempts to connect to that bad route. If the routing is in the state where the nodes are head to tail, around the matrix, the looping will occur, and the delay will be present.

I would be interested in the solution to the route looping problem. To me, this seems like it would be an intractable problem with the NETROM ROUTING system. It even occurs between triangularily situated , radio linked nodes, let alone nodes on a matrix.

73, Don wb9mjn@uugate.wa7slg.ampr.org

63. Linked Regenerators.

From: wb9mjn@uugate.wa7slg.ampr.org
Date: Mon, 14 Aug 95 13:38:18 mst
To: netsig@tapr.org
Message-ID: <1610@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

Hi,

Bill Vodall proposed "Linked Regenerator" (my term) scheme. At first glance this is a good idea, but if one analyzes the thruput of such a system, it is seen to be very low quality. That is, for the money spent the available thruput is poor.

A Regenerator provides a CSMA channel. CSMA channel thruput under full load is 1/3 the broadcast data rate. This assumes that whatever thruput is provided, Ham packet will expand to use it all. Thus, the staturated channel thruput can be seen as the full load thruput.

Assuming no process delay at the home site or "router", we can see that the thruput of 1/3 the broadcast data rate is all that can be trusted to be available, if there were no modem lockup, T/R turnaround or other changeover delays. Due to the nature of networked communications protocols, there will always be small network level ack packets. Thus, changeover delays cannot be "operated" out of the thruput problem, by making packets larger. Combineing the packets from several ongoing communications, to be sent as a burst, requires delaying the processing of some packets, to gain efficientcy for the network. This delay is experienced by some users, somewhere.

The changeover delay is at least a factor of 2 for 1200 baud, and 56 KB modems/Radios i ve worked with. So, we have a system with a thruput of 1/6 the broadcast rate.

What have we spent on this system ? We ve built a full duplex radio, that is the repeater. The feedline and antenna for the repeater site, also. At the home site, we ve bought simplex radios for each linking channel, and a routing computer / modems to link those radios together, as well as several feedlines, and cheaper antennas.

The "Linked Regenerator" has cost more than "Cellnet" scheme I wrote up for the ARRL CNC several years ago. And it has 1/6 th thruput. The CELLNET does not require the home site equipment, except for the routing computer. The routing computer is located at the CELLNET site, tho. So, for 1/6 the performance we have to buy an additional 2 radios, 2 feedlines, and 2 antennas for the home site, over the CELLNET scheme. My guess is that equipment is 1/3 the system cost. Since it can be cheaper stuff at a low altitude location.

1/6 performance divided by 4/3 s the cost results in a system that 1/8 the quality of the CELLNET.

A better solution is to come up with a routing computer and routing computer installation that is reliable at the high site. Which means reengineering the PC, or buying a PacketTEN. Whatever u have, time or money, would be the determining factor of how u should procee.

73, Don, wb9mjn@uugate.wa7slg.ampr.org

64. Re: [NETSIG:1892] Re: Diodes or Better.

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 15 Aug 95 09:04:31 EDT
To: netsig@tapr.org
Message-ID: <15021573.1cea@ram.net>
Rendered body type: text/plain

> I would be interested in the solution to the route looping problem. To me,
> this
>seems like it would be an intractable problem with the NETROM ROUTING system
>. It
>even occurs between triangularily situated , radio linked nodes, let alone n
>odes
>on a matrix.
>
>73, Don wb9mjn@uugate.wa7slg.ampr.org
>

Most of the NetRom networks I know of get around this problem by locking in known good routes, so that when unreliable paths are heard they will be ignored.

It is humerous since the dynamic routing table updates is the very big feature... I think the tables are now stored in bbRAM.

Even with locked in routes you will still get the (unneeded) node broadcasts..

ROSE has always required predefined network routing. The general idea is that a person (or groups of people) can identify the routes that should be used with better success than a program.

Oh yea, ROSE has no nodes broadcasts...

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

65. Need help with phone modem attach, etc...

From: "EDWARD J. SADOWSKI, JR." <EDSADOW@ids.net>
Date: Tue, 15 Aug 1995 10:45:11 -0400 (EDT)
To: NETSIG@TAPR.ORG
Cc: EDSADOW@ids.net
Message-ID: <950815104511.3d483@ids.net>
Rendered body type: text/plain

I am running jnos 1.10j and need guidance on attaching my 14.4k modem so I can talk to the outside world using tip and (?) ppp. Would the following be correct/appropriate:

```
#
attach asy 2f8 3 ppp pp0 4096 1500 38400
#
start tip
#
```

Can I use the dial command which appeared in grinos 1.08, for example, to point to a dialer file (e.g., dialer.pp0) to autodial to my local internet provider? Or would I do this from tip, manually issuing modem commands?

Any and all input and help for this nos novice is appreciated greatly!

73, Ed, K1BYV

66. Re: [NETSIG:1879] Re: PC on a hill

From: ve6eei@ve6eei.ampr.ab.ca (Evan E. Idler, Edmonton, AB [192.75.200.5])
Date: Tue, 15 Aug 95 20:45:01 mst
To: netsig@tapr.org
Message-ID: <31868@ve6eei.ampr.ab.ca>
Rendered body type: text/plain

===== Begin of included message =====

> Hi,
>
> >3) There are a few products that are add-on ISA-bus "watchdog" timers.
> >Usually they require a TSR to load, and if the card does not see it being
> >polled at the required times, it re-boots the computer.
>
> I will Email to those requiring it a file containing 2 different watchdog
> like this, designed by hams.
> Please specify UUencode or MIME.
>
> >From Laurent FERRACCI, F1JKJ -- PGP Email welcome
>   > F1JKJ@planete.net <   Public Key on mail servers
>   Fidonet 2:323/27.1
>   Compuserve ID 100407,436
>
>
  ===== End of included message =====

I us a DTMF Decoder board that will accept up to a 16 digit sequence,
that pulls in a relay for 5 seconds. The unit cost about $100 Canadian
and has multiple outputs, and multiple codes. It can even be
remotely reprogramed with new codes if requires. It's the simplest
thing I could think of doing when I set up a remote computer node in
the basement at work.

The board is about 1 inch by 2.5 inches. It runs on 5.5 to 20 volts
at <10 mA. I put it inside the computer with a small pigtail wire
lead over to the external speaker jack on one of the radio's.

The board is a NORCOMM NC-401 TT-Decoder board.

Norcomm Corporation
12438 Loma Rica Drive
Grassy Valley, CA 95945
(916) 477-8400

(PS: I have no affiliation with the company listed above.)

73
Evan

==
Evan E. Idler | Of All The Things I've Lost
ve6eei@ve6eei.ampr.ab.ca | In Life, I Miss My MIND The
Edmonton, Alberta, Canada | Most!!!
Amateur Packet Radio Station VE6EEI [192.75.200.5]
==

67. Re: Diodes or Better..

From: wb9mjn@uugate.wa7slg.ampr.org
Date: Tue, 15 Aug 95 18:23:38 mst
To: netsig@tapr.org
Message-ID: <1940@uugate.wa7slg.ampr.org>
Rendered body type: text/plain

Hi Tom,

I m sorry. My poor rhetorical style here is probably confusing you.

While its true that route looping can be minimised with the "Locked ROUTES"
technigue, that s not what i was getting asking for comment on.

Even reliable paths have failures of equipment. And the nodes off thru
the failed node will have looped routes in the part of the network which
used the failed node to reach them. Boy, that s a lousy sentance, hi. What
I m trying to say, is that when a node fails, part of the network is iso-
lated from other parts. The node routes which can no longer be reached
in one part of the network, will set up looping routes within that one
part of the network, as the network tries to reroute them, and no other
path exists to the newly isolated portion of the network.

This is a disadvantage to an automatic routed network, even one that uses
operator configuration of reliable neighbor nodes. Not that its a total
thing, mind u. In totally operator routed networks, such as NETROM and
allot of the TCPIP AMPRNET, u get the situation where routing never gets
done in the first place. And even when its completed for one politcal
boundary, its really tuff to get distributed across allot of other
political boundaries. The end result being no-routing-at-all. Oops, make
that "ROSE and allot of the TCPIP AMPRNET", above. There are pro s and
cons to everyway of doing anything.

But, this is getting off the subject. Which was, how does one get bad
routes to die away, without causing loops in the remaining portion of
the network?

The only networking technigue i know of that addresses this is FLEXNET. When
a node has a reliable neighbor, it tells the whole network via a network
wide , relayed broadcast, that it has a path to that neighbor. If the
path were to fail, at any time, the node then sends a new broadcast telling
all the network that can recieve the broadcast, that it no longer has that
path any longer. Since, these broadcasts are only about the neighbors of
a particular node, and not the nodelist a particular node has, they are
somewhat smaller. The broadcasts are made in connected mode, to insure
reliable disemination. But the broadcast from several nodes away are
relayed on thru, so the broadcasting overhead is just as considerable
as with NETROM.

This technigue was what I was hoping would be the result of the RSPF
TCPIP work. But that hasn t happened yet. But TCPIP is versatile enuf
that it doesn t have to happen, and we can still use it. And when it
does happen, we can update quickly. Still, it would be nice to have
a FLEXNET style automatic router, running at our bigger TCPIP sites,
and then we could really call these sites "ROUTER"'s! Which is what
they really need to be.

73, Don wb9mjn@uugate.wa7slg.ampr.org

68. Re: [NETSIG:1897] Re: Diodes or Better..

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Wed, 16 Aug 95 13:03:01 PDT
To: netsig@tapr.org
Message-ID: <9508161303.ZM5673@hanko>
Rendered body type: text/plain

On Aug 16, 7:44am, wb9mjn@uugate.wa7slg.ampr.org wrote:

> But, this is getting off the subject. Which was, how does one get bad
> routes to die away, without causing loops in the remaining portion of
> the network?

Normally, one sets the network parameters such that the failed routes
will decay out of the system fairly rapidly. In any case, the connects
will fail (after the number of tries you have programmed) and there
just isn't any problem. If you have "locked in" the routes, then of
course they will never go away. If you have set the retry counts high,
or the "amount to decrease qual on failure" low, then it may take a
long time (days, weeks, years) for the routes to go away.

With normal parameter settings, the routes to a failed node should
go away in 6 hours or less.

Note that there is a bug in some recent versions of bpq that will
not allow "dead" node names to ever clear from the node lists, under
certain parameter settings.

   ... Hank

--

```
Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

69. Re: PC on a hill

From: Charles Burnett <burnett@col.hp.com>
Date: Wed, 16 Aug 95 9:02:10 MDT
To: netsig@tapr.org
Message-ID: <199508161502.AA032955331@relay.hp.com>
Rendered body type: text/plain

> I us a DTMF Decoder board that will accept up to a 16 digit sequence,
> that pulls in a relay for 5 seconds. The unit cost about $100 Canadian

I built a board similar to this for a node in Shreveport, LA, that is
1600 feet up on a tower (not easily accessible!). Most of the parts needed
are easily found in a junk box: eprom, flip-flops, DTMF decoder,
transistor, and a relay. With a housing, connectors, perf board, etc,
the total cost was about $40.

This kind of box is quite handy when you are beta-testing switch
software and don't even know it. :-)

Charles
--
Charles Burnett   Internet: burnett@col.hp.com
Hewlett-Packard Co.
Network Test Division
P.O. Box 7050
Colorado Springs, CO 80933-7050

70. [NETSIG:1898] Re: Diodes or Better.. -Reply

From: Orville Beach <Orv@micom.com>
Date: Thu, 17 Aug 1995 08:47:18 -0800
To: netsig@tapr.org
Message-ID: <s0330296.085@micom.com>
Rendered body type: text/plain

[Hank said]

"Note that there is a bug in some recent versions
of bpq that will not allow "dead" node names to
ever clear from the node lists, under certain
parameter settings."

Hmmm.. I've seen this. Hank, may I have some more
info please? Which versions, and which certain
parameter settings?

Thanks mucho.

73 - Orv - wb6wey
orv@micom.com

71. Re: [NETSIG:1900] Re: Diodes or Better.. -Reply

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 17 Aug 95 12:56:59 PDT
To: netsig@tapr.org
Message-ID: <9508171256.ZM8566@hanko>
Rendered body type: text/plain

On Aug 17, 12:16pm, Orville Beach wrote:
> Subject: [NETSIG:1900] Re: Diodes or Better.. -Reply
> [Hank said]
>
> "Note that there is a bug in some recent versions
> of bpq that will not allow "dead" node names to
> ever clear from the node lists, under certain
> parameter settings."
>
>
> Hmmm.. I've seen this. Hank, may I have some more
> info please? Which versions, and which certain
> parameter settings?

Don't have the details at work, so can't help much.
Is obvious when it happens.
My guess: 4.06k and above, when you fail to set the
quality decrement properly on each port.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

72. Definition of a "network"

From: jra@ag9v.ampr.org
Date: Thu, 17 Aug 1995 15:40:56 -0400 (EDT)
To: netsig@tapr.org, brian@lantz.com, tcp-group@ucsd.edu
Message-ID: <199508171940.PAA01776@ag9v.ampr.org>
Rendered body type: text/plain

I'm trying to describe what a "network" is for my NOS book, and need input from
those more knowledgeable about the formal definitions than I.

My view has always been that an IP network is a group of stations who can all
communicate directly with one another. All those stations share a single
network or subnet number.

>From that, if you can only reach a station via a gateway, he's not part of
your network. (OK, this ignores digis and other Real World Phenomena, but
we're being technical here.)

Also following from that, if local activity takes place on two frequencies,
with perhaps a gateway linking them, each of those frequencies constitutes
a network, and should have its own net or subnet number.

I know that dynamic routing protocols can eliminate the need for strict
subnetting, but do they change the fundamental definition?

Am I taking too narrow a view? Should I say that full connectivity within
a network is a good thing, but isn't required by the definition?

John

PS -- please copy "john.ackermann@daytonOH.attgis.com" in any replies, as my
mail exchanger is going down tomorrow for the next ten days and mail to my
regular address is likely to be lost.

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

73. Re: [NETSIG:1902] Definition of a "network"

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Thu, 17 Aug 95 16:42:41 PDT
To: netsig@tapr.org
Message-ID: <9508171642.ZM8935@hanko>
Rendered body type: text/plain

On Aug 17, 5:46pm, jra@ag9v.ampr.org wrote:
> Subject: [NETSIG:1902] Definition of a "network"
> I'm trying to describe what a "network" is for my NOS book, and need input
from
> those more knowledgeable about the formal definitions than I.
>
> My view has always been that an IP network is a group of stations who can all
> communicate directly with one another. All those stations share a single
> network or subnet number.

This depends a great deal on which hat you are wearing.

Case 1 - the user viewpoint:

I've always used the term "network" to describe applications
which can communicate with each other using a common protocol.

How they happen to communicate with each other does not matter,
it is the fact that they can which is important.

e.g. if I can trasfer data using ftp (an application) between
two systems a and b, then I would say "a and b are in the same
network."

e.g. if I cannot access a single document from two different
instances of Microsoft Word (a, running on my Mac and b running
on my PC, where both machines were in the same ip subnet), then
I would say "a and b are not in the same network."

e.g. if from the Mac I could ping the PC and from the PC I could
ping the Mac in the above example, then I would say "a and b are
in the same network."

e.g. if email messages can be exchanged between users a and b,
then I would say "a and b are in the same network."

Case 2 - the network hardware purist viewpoint:

"Two machines are in the same network if and only if the hardware
of machine a which connects to the network has a direct physical
connection to the hardware of machine b which connects to the network."

But what about networks where the physical connection goes through
the ether using radio?

"See my first answer."

> >From that, if you can only reach a station via a gateway, he's not part of
> your network. (OK, this ignores digis and other Real World Phenomena, but
> we're being technical here.)

Technically, you have to first nail down the domain of discourse.

Are we talking layer 1? If so, then the only 'gateways' I'm aware
of are regenerative repeaters. If we are talking layer 2, then we
have different kinds of gateways, for exaple KA-NODES. If we are
talking layer 5 and above, then we have many different kinds of
gateways. To put this into the tcp/ip world; do you mean an ip gateway,
or a tcp gateway? We have both flavors here in our corporate network,
along with email gateways, gateways defined by various data base protocols,
etc. etc.

> Also following from that, if local activity takes place on two frequencies,
> with perhaps a gateway linking them, each of those frequencies constitutes
> a network, and should have its own net or subnet number.

There are many ways the two frequencies may be linked. There might be
a layer 1 link (audio or digital repeater) connecting them. There might
be a layer 2 link (back-to-back tncs e.g.), there might be a layer 3 link
(NET/ROM, ip router, ROSE, Texnet, et al), there might be a layer 7 link
(the old "BBS gateway code" that automatically linked through more than
one BBS system to get to the desired user).

> I know that dynamic routing protocols can eliminate the need for strict
> subnetting, but do they change the fundamental definition?

Subnetting can occur in many ways: by frequency, by application restriction,
by ip router restriction, by horizon limits (e.g. typical NET/ROM situation),
by fiat (e.g. NET/ROM lockouts that attempt to subnet systems which are
in direct communication with each other on the same frequency).

My view? A subnet exists because users agree it should exist.

> Am I taking too narrow a view? Should I say that full connectivity within
> a network is a good thing, but isn't required by the definition?

Full connectivity at what network layer?

   ... Hank

--

```
Hank Oredson @ Mentor Graphics             Library Operations
Internet     : hank_oredson@mentorg.com    "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM
```

74. Re: [NETSIG:1902] Definition of a "network"

From: jra@ag9v.ampr.org
Date: Fri, 18 Aug 1995 08:29:17 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199508181229.IAA03797@ag9v.ampr.org>
Rendered body type: text/plain

I (jra@ag9v.ampr.org) wrote:
>
>I'm trying to describe what a "network" is for my NOS book, and need input from
>those more knowledgeable about the formal definitions than I.

If it wasn't clear from my message, I'm not asking whether the BBS store-
and-forward system is a network. I'm talking only about whether, within
the class of IP networks, all stations on a single net must be fully connected.

Just wanted to clear things up and not ignite another religious war.

John

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

75. Status of German 23cm Radios?

From: cestey@ix.netcom.com (Carl Estey)
Date: Fri, 18 Aug 1995 19:23:10 -0700
To: netsig@tapr.org
Message-ID: <199508190223.TAA14783@ix9.ix.netcom.com>
Rendered body type: text/plain

The Fall 1994 PSR contained a 1.2Ghz Digital Radio Interest Survey. An
article in the same issue, titled "A network Building Opportunity" by Carl
K9VXW, described the radios designed by the Karlsruhe Packet Radio Group.
At the 13th ARRL Digital Conference in Minneapolis, Wolf-Henning Rech,
DJ9IC, shared some great German Beer and a viewing of some interesting 23 CM
radio link gear the Karlsruhe group equipment). Both were memorable!

Our local radio club is becoming interested in building a higher speed
network to gradually replace the existing 9k6 MITREK gear. Can anyone tell
me what developments have occured with the possibility of TAPR importing the
23cm radios and amps? Also, if you know, please share what the Germans are
up to in this and higher frequency projects.

In advance, Thanks!

Carl - WA0CQG

```
_____________________________________________________________________
Carl Estey WA0CQG                Member: ARRL
276 Walnut Lane                      Member:  TwinsLAN Amateur Radio Club
Apple Valley, MN 55124           Minneapolis/St. Paul Digital Frequency
Coordinator
(612) 432-0699)                        Member:  Honeywell Amateur Radio Club
cestey@ix.netcom.com            Member:  Twin City FM Club
wa0cqg@wa0cqg.#msp.mn.usa.noam
```

76. Re: [NETSIG:1904] Re: Definition of a "network"

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Fri, 18 Aug 95 17:30:12 PDT
To: netsig@tapr.org
Message-ID: <9508181730.ZM12112@hanko>
Rendered body type: text/plain

On Aug 18, 6:06pm, jra@ag9v.ampr.org wrote:
> Subject: [NETSIG:1904] Re: Definition of a "network"
> I (jra@ag9v.ampr.org) wrote:
> >
> >I'm trying to describe what a "network" is for my NOS book, and need input
from
> >those more knowledgeable about the formal definitions than I.
>
> If it wasn't clear from my message, I'm not asking whether the BBS store-

> and-forward system is a network. I'm talking only about whether, within
> the class of IP networks, all stations on a single net must be fully
connected.

For the subnets I manage here at work, the answer is yes.

That is, the subnets are "normally" fully connected, and that is
what we intend when we use the term subnet, but we do have situations
where there are hosts which cannot "see" certain other hosts
on the same subnet because we choose to restrict connectivity
for some reason (usually for testing).

>
> Just wanted to clear things up and not ignite another religious war.

Certainly no intent to do that. I do think the issue is not
so simple however, because of what can happen across bridges
and routers, even at the ip addressing level.

A prime example of this is firewalls and what happens in the dmz,
and address aliasing, which also in a sense is used to define
subnets at the ip address level.

i.e. I think this is a complex topic nowdays, no matter which
ISO layer one considers.

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

77. Re: [NETSIG:1904] Re: Definition of a "network"

From: Jeffrey Austen <JRA1854@tntech.edu>
Date: Fri, 18 Aug 1995 18:55:19 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <01HU88O9S5IQ936MZH@tntech.edu>
Rendered body type: text/plain

> If it wasn't clear from my message, I'm not asking whether the BBS store-
> and-forward system is a network. I'm talking only about whether, within
> the class of IP networks, all stations on a single net must be fully
> connected.

That is almost a circular question. The answer is: it depends. What is
your definition of a "single net"?

I will assume that the term "subnet" in reference to IP addresses refers
to all stations with the same network and subnetwork number. In amateur
RF usage this would most likely refer to all stations using the same
frequency and (for VHF/UHF) residing in the same geographical area.

In a wired network it is assumed that a subnet is fully connected and the
configuration of hosts and routers on that subnet is correspondingly
simple.

In an amateur RF network the fully connected subnet assumption is often
not true. The only practical case I can think of where a fully connected
subnet exists is when there is something like a full-duplex digipeater
that all stations use.

In most cases the subnet is not fully connected and the stations in the
subnet must have, in addition to the normal configuration, routes defined
for certain stations in the subnet. When using non-static routing
appropriate to this situation the routing could be done automatically.

Jeff, k9ja
+-+
Jeffrey Austen | Tennessee Technological University
jra1854@tntech.edu | Box 5004
(615) 372-3485 | Cookeville Tennessee 38505   U.S.A.

78. RE: Definition of a "network"

From: "Ackermann, John" <ackerj@lawdept.daytonoh.ATTGIS.COM>
Date: Fri Aug 18 16:20 EDT 1995
To: mikebw <mikebw@bilow.bilow.uu.ids.net>,
"'smtp:netsig@tapr.org'" <netsig@tapr.org>,
"'smtp:tcp-group@ucsd.edu'" <tcp-group@ucsd.edu>
Message-ID: <3034F7DE@prowler.daytonoh.attgis.com>
Rendered body type: text/plain

Mike Bilow wrote, in response to my question about defining a network (with lots of good stuff deleted):
> j> Also following from that, if local activity takes place on
> j> two frequencies, with perhaps a gateway linking them, each
> j> of those frequencies constitutes a network, and should have
> j> its own net or subnet number.
>
>Each of these groups of hosts is a "local area network," perhaps, but Amprnet
>is the network and all of these hosts are a part of it. The term "network" in
>the context of "subnet" is again something of a Unix-ism, and might mean
>different things to different people.

That's the concept I was too stupid to articulate -- "local area network" is what I'm trying to define, in the context of IP subnet assignments (in the ham world, not the real world). I need the definition because I'm trying to explain the static routing that most of us still rely on in our IP network schemes. The LAN concept is what I was driving at. Too close to the forest to see the trees, I guess.

Thanks, Mike!

John

79. Re: [NETSIG:1894] Re: Diodes or Better.

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Tue, 22 Aug 1995 02:10:39 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0skoPy-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>
>
> ROSE has always required predefined network routing. The general idea is that
> a person (or groups of people) can identify the routes that should be used
> with better success than a program.
>
> Oh yea, ROSE has no nodes broadcasts...
>
> ____
> Thomas A. Moulton, W2VY RAM Mobile Data
> w2vy@ram.net (908) 602-5227
>

Tom,

I honestly believe the ROSE is probably "better" that what he have now. Any system that increases the reliability and reduces overhead is doing good.

But....

ROSE is not a consideration for any of the networks I use or have some small say in the design of.

Here's why.

First, my opinion is that the gosh awful numbers that have to be entered with the call sign would be a royal pain to remember and use. That's just the feeling I get from reading your comments. I've never yet experienced operation on a ROSE network so I may be completely off base.

Second, besides cutting the packet size by eliminating overhead, it doesn't seem to me that ROSE can provide any increased reliability over a NetRom circuit. It may be just the opposite when we finally get a Smart version that will automatically adjust the qualities for bogus/flaky paths.

Lastly, ROSE is not an open system. If the source code was available and it was in ?NOS - I, and I'm sure many others, would have tried it out and put it to use where it would be advantageous. As it is now, it's just too difficult to experiment with in a pure NetRom network with extremely limited time and

resources.

This is my impression of ROSE. I may well be totally off the wall here and
probably am, but that's how it seems to me right now.   Which just goes to
prove how hard it is for a superior idea to compete with the status-quo.

73, Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

80. CQ CQ CQ

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Tue, 22 Aug 1995 01:29:09 -0700 (MDT)
To: NETSIG TAPR <netsig@tapr.org>
Message-ID: <m0sknlo-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

CQ CQ?

Ever call CQ on a remote node?   I have often.

Ever get an answer?   I haven't...

I bet most folks don't know the "two" ways of answering a CQ.

It would, IMHO, be neat if the packet terminal program writers and
developers of the next generation of client programs were to have
options to monitor for CQ's and alert the operator (ding ding ding)
or log the calls for later reference.   Being able to actually connect
easily to a living person in some remote location would bring a whole
new dimension to node hopping.

Bill

Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

81. Where to get YAPP protocol description ?

From: f1jkj@planete.net (Laurent Ferracci - F1JKJ)
Date: Mon, 21 Aug 1995 22:21:42 +0200
To: netsig@tapr.org
Message-ID: <199508212021.WAA16418@unix10.pressimage.fr>
Rendered body type: text/plain

Hi,

The title says it all...
Do you know any FTP or WWW site ?

Thanks

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
       > F1JKJ@planete.net <   Public Key on mail servers
         Fidonet 2:323/27.1
         Compuserve ID 100407,436

82. Re: [NETSIG:1909] Re: Diodes or Better.

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 22 Aug 1995 13:58:58 -0500
To: netsig@tapr.org
Message-ID: <199508221858.NAA02301@mercury.texoma.com>
Rendered body type: text/plain

According to Bill...

>This is my impression of ROSE. I may well be totally off the wall here and
>probably am, but that's how it seems to me right now.   Which just goes to
>prove how hard it is for a superior idea to compete with the status-quo.
>

A more accurate description would be "different", instead of superior.

Tom may see things otherwise, but in fact ROSE has it's assets AND it's
liabilities, as do all of the DIFFERENT networking systems.

This, or that system may be superior in some limited way or another, but so far I've seen no evidence that any one system is "better" than all the others IN ALL WAYS.

Except one! The "system" I refer to here is where several different flavors of packet networking exist on different freqs, with cross connections made possible, perhaps by a BPQ switch. That what I have enjoyed at this location in north Texas, and I like the diversity; The freedom of choice to use whatever system suits my needs of the moment.

That's just my opinion though.. No reason for anyone to get thier panties in a twist over it, as they so often seem to do here.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

This sentence is true.
The sentence above is false.

83. Re: [NETSIG:1909] Re: Diodes or Better.

From: tmoulton@ram.net (Tom Moulton)
Date: Tue, 22 Aug 95 15:27:56 EDT
To: netsig@tapr.org
Message-ID: <15021573.1d0b@ram.net>
Rendered body type: text/plain

>From: Bill Vodall <vodall@bigsky.dillon.mt.us>

>I honestly believe the ROSE is probably "better" that what he have now.
>Any system that increases the reliability and reduces overhead is doing
>good.
>
<snip>
>
>First, my opinion is that the gosh awful numbers that have to be entered
>with the call sign would be a royal pain to remember and use. That's just
>the feeling I get from reading your comments. I've never yet experienced
>operation on a ROSE network so I may be completely off base.

Learning one number for a person has got to be better than a series of connect commands to node hop there...

There have been discussions to adding automated connection setup where the network will locate the destination station based upon where they were last active.

But this is still being designed.

>
>Second, besides cutting the packet size by eliminating overhead, it doesn't
>seem to me that ROSE can provide any increased reliability over a NetRom
>circuit. It may be just the opposite when we finally get a Smart version
>that will automatically adjust the qualities for bogus/flaky paths.

There are a number of performance metrics used to evaluate networks.

Reliability - Duration of connect, throughput, action on lost data,
              time to recover restored node, etc

A couple key facts:

When a connection is dropped all data is flushed from the entire network, no wasted bandwidth while the network continues to deliver data for a failed connection. (Was most notable before bbs's had DUP message defenses/MID)

The throughput for ROSE is about twice that of NetROM, mostly due to the fact that ROSE relies upon the end user for the transport protocol.

We could go on, but I'll stop now and see if you want to discuss it more...

>
>Lastly, ROSE is not an open system. If the source code was available and it
>was in ?NOS - I, and I'm sure many others, would have tried it out and put i
>t
>to use where it would be advantageous. As it is now, it's just too difficul
>t
>to experiment with in a pure NetRom network with extremely limited time and

>resources.

The source had been released in the past and there was never any feedback of
enhancements so I stopped doing it. To use it and write applications for it
you don't need the source.

It would be nice if there were an X.25 interface on NOS to talk to ROSE via
a level 3 link, but not required.

>
>This is my impression of ROSE. I may well be totally off the wall here and
>probably am, but that's how it seems to me right now.   Which just goes to
>prove how hard it is for a superior idea to compete with the status-quo.

As long as people are still open to ideas...
>

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

84. G8BPQ KISS driver for NOS and Linux?

From: Steve Stroh <strohs@halcyon.com>
Date: Tue, 22 Aug 1995 14:44:39 -0700 (PDT)
To: netsig@tapr.org, tcp-group@ucsd.edu, nos-bbs@hydra.carleton.ca
Message-ID: <Pine.ULT.3.91.950822143739.28916A-100000@chinook.halcyon.com>
Rendered body type: text/plain

I recently read that G8BPQ developed a version of TNC2 KISS that supports
a simple checksumming method to avoid invalid data being received by a
TNC.

The problem we appear to be having is that noise on the very long RS-232
lines between the host PC and the KISS TNC appear to be resetting the TNC,
putting it into weird states and changing the parameters. It appears that
G8BPQ KISS would eliminate this problem.

The problem is that we are not aware of a "G8BPQ KISS" driver for NOS or
Linux. Is anyone aware of one?

Thanks for any help that anyone can offer on this subject.

Steve

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

85. Re: G8BPQ KISS driver for NOS and Linux?

From: Steve Stroh <strohs@halcyon.com>
Date: Wed, 23 Aug 1995 07:48:22 -0700 (PDT)
To: Phil Karn <karn@qualcomm.com>
Cc: netsig@tapr.org, tcp-group@UCSD.EDU, nos-bbs@hydra.carleton.ca
Message-ID: <Pine.ULT.3.91.950823074644.20748B-100000@chinook.halcyon.com>
Rendered body type: text/plain

On Tue, 22 Aug 1995, Phil Karn wrote:

> >The problem we appear to be having is that noise on the very long RS-232
> >lines between the host PC and the KISS TNC appear to be resetting the TNC,
>
> The proper solution is to fix your RS-232 cable...

We'd like to, but it's a mixture of fiber, copper, and microwave over 30
miles long. "Fixing it" is kind of out of our hands. I figured I'd get
lightly toasted for that statement.

> Phil

Steve N8GNJ

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

86. Re: [NETSIG:1904] Re: Definition of a "network"

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 22 Aug 1995 16:18:07 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950822160643.5060B-100000@acca>
Rendered body type: text/plain

Hi John, I was the first I think to write a many message paper
titled "The Wonderful PBBS Network". In it I showed that the pbbs network
works further than a AX.25 node system can do.

        As for what is a network in terms of tcp/ip I own 2 X1J nodes and
define a network as 2 or more tcp/ip stations connected by an IP router.
In truth ANY NOS station can be an IP router, but 2 hams connected to
each other a network it is not. A network can be improved by using
subnets and I have found that subnets are poorly understood by
professionals in the internet world.

        I hope your new book will dwell on the subnet idea and explain it
well since the IP number gurus want to set things up as subnets. I know
understand how it works and how to set my 2 routers to use them.

-karl k5di

On Fri, 18 Aug 1995 jra@ag9v.ampr.org wrote:

> I (jra@ag9v.ampr.org) wrote:
> >
> >I'm trying to describe what a "network" is for my NOS book, and need input from
> >those more knowledgeable about the formal definitions than I.
>
> If it wasn't clear from my message, I'm not asking whether the BBS store-
> and-forward system is a network. I'm talking only about whether, within
> the class of IP networks, all stations on a single net must be fully connected.
>
> Just wanted to clear things up and not ignite another religious war.
>
> John
>
> --
> John Ackermann   AG9V
> Internet: jra@ag9v.ampr.org
> Packet: AG9V@N8ACV.#DAY.OH.USA
>

87. Re: [NETSIG:1913] Re: Diodes or Better.

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr. AG0N)
Date: Wed, 23 Aug 1995 02:55:47 +0000
To: netsig@tapr.org
Message-ID: <9508230254.AB21782@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

>>From: Bill Vodall <vodall@bigsky.dillon.mt.us>

>>First, my opinion is that the gosh awful numbers that have to be entered
>>with the call sign would be a royal pain to remember and use. That's just
>>the feeling I get from reading your comments. I've never yet experienced
>>operation on a ROSE network so I may be completely off base.
>
>Learning one number for a person has got to be better than a series of
>connect commands to node hop there...

Remember, most people know over half of the numbers used in their area. The
numbers usually represent the area code and prefix at the destination node.
The area code is a cinch, unless you are going several hundred miles.

>A couple key facts:
>
>When a connection is dropped all data is flushed from the entire network,
>no wasted bandwidth while the network continues to deliver data for a failed
>connection. (Was most notable before bbs's had DUP message defenses/MID)

Please excuse me, Tom, if I give false info here. It is drug out of the
basement brain cells from many years ago when I first looked at ROSE. I'm
assuming that these features have not been removed.

The "flushing" Tom is talking about means that when a station disconnects
from his local ROSE node, any data enroute, and not at destination yet, is

purged. A (for lack of knowledge of the proper phrase) priority supervisory packet is sent from the disconnect point, to the destination point, skipping ahead of the data in-transit, and the far end is disconnected. Actually, as I think of it, I think the priority packet is acted on at each node on the route as it is passed, and all data that is being held for the destination station is dropped at that time, at each node.

Another thing that I remember as a "plus" for ROSE is its ability to recognize a looped route. If you hop out half way across the state and then try to connect to a destination that is at some mid-point along the already established link, ROSE recognizes this and cuts out the extra loop. Putting it into Bill's perspective, if he went from SWT to ANG and then decided to connect from there to BIL, everything from BIL south would be dropped by ROSE, automatically and he would save 500 miles or so of duplicated path.

My apologies, Tom, if I remember this wrong. It's been several years since I read all the details.

Gary McDuffie, Sr. - AG0N
mcduffie@hannibal.wncc.cc.ne.us
AG0N@AG0N.#WNE.NE.USA.NOAM

88. Re: G8BPQ KISS driver for NOS and Linux?

From: Phil Karn <karn@qualcomm.com>
Date: Tue, 22 Aug 1995 21:14:12 -0700
To: strohs@halcyon.com
Cc: netsig@tapr.org, tcp-group@UCSD.EDU, nos-bbs@hydra.carleton.ca
Message-ID: <199508230414.VAA16800@servo.qualcomm.com>
Rendered body type: text/plain

>The problem we appear to be having is that noise on the very long RS-232
>lines between the host PC and the KISS TNC appear to be resetting the TNC,

The proper solution is to fix your RS-232 cable...

Phil

89. Network Evaluation Standards

From: tmoulton@ram.net (Tom Moulton)
Date: Wed, 23 Aug 95 06:49:33 EDT
To: netsig@tapr.org
Message-ID: <15021573.1d0d@ram.net>
Rendered body type: text/plain

>This, or that system may be superior in some limited way or another, but so
>far I've seen no evidence that any one system is "better" than all the other
>s
>IN ALL WAYS.

This is a point that has come up a few times in the last year, but it has never completed, maybe there is interest in working on it now.

To properly evaluate systems in "ALL WAYS" we should have a generally agreed upon list of metrics and/or test scenerios used to evaluate which one is "BEST".

For the list to be 100% complete it could include a weighting for each item but that would be completely impossible to agree upon.

Another factor is what the end user actually uses the system for, which could change the weighting slightly.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

90. Re: [NETSIG:1914] G8BPQ KISS driver for NOS and Linux?

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 23 Aug 1995 10:59:26 -0500
To: netsig@tapr.org
Message-ID: <199508231559.KAA29660@mercury.texoma.com>
Rendered body type: text/plain

According to Steve...
>
>I recently read that G8BPQ developed a version of TNC2 KISS that supports
>a simple checksumming method to avoid invalid data being received by a

>TNC.
>
>The problem we appear to be having is that noise on the very long RS-232
>lines between the host PC and the KISS TNC appear to be resetting the TNC,
>putting it into weird states and changing the parameters. It appears that
>G8BPQ KISS would eliminate this problem.
>

I've used BPQ's multidropped KISS with a compatable TNC (AEA PK-96) for
several months now, and it just runs and runs with no attention required on
my part.

Even though I only am using one TNC on this port, the multidropped KISS's
 Polling and Checksum features has given this setup reliability I had previously
 only enjoyed with my DRSI cards. BPQ multidropped KISS was originally
 developed to allow several TNC's to share a single COM port. What I'm saying
 here is that it's worth using, even on single TNC's.

I never have to Reset, Re-KISS, or Re-start that TNC. It just chugs right
along with no problems whatsoever.

I dunno squat about LINUX, but wonder if perhaps you could use a DOS
emulator in order to take advantage of BPQ's multidropped KISS with that
operating system..

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

This sentence is true.
The sentence above is false.

91. IPv6 (IPng) .....

From: paul@paccomm.com
Date: Wed, 23 Aug 95 12:25:18 UTC
To: netsig@tapr.org
Message-ID: <4221@paccomm.com>
Rendered body type: text/plain

Anybody got any comments about the extended address IP that's
proposed as IPv6 or IPng (next generation) and what effect
it'll have on amateur TCP/IP over the air ??????

Anybody got any detail - all I can find is written description?

I presume Phil (NOS) and Brian (TNOS) know of this proposed
change to how TCP/IP works in the stack?

Are there any issues which would affect use of it on TheNet or
ROSE ??????

Questions, questions, questions!

~~~~~~   .
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980 |\
Fax:+1 (813) 872-8696   /| \
Views expressed here are not necessarily those of PacComm / |--\
Don't surf the net, SAIL it!   / | * \
Captain of S/V "Spindrift", Dunedin, FL.   / |----\
Catalina 36: Tall rig (58'), Winged Keel (4' 2"),   / | \
Full batten main, Boston Whaler dinghy.   /-----|------` |
PacComm Packet Radio Systems   \------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618   _____________/.__.
                                                       ~~~~~~~~~~~~~~~~~~~~~~~~

92. Re: [NETSIG:1920] Re: G8BPQ KISS driver for NOS and Linux?

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 23 Aug 1995 12:30:59 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199508231730.MAA18190@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

> According to Steve...
> >
> >I recently read that G8BPQ developed a version of TNC2 KISS that supports
> >a simple checksumming method to avoid invalid data being received by a
> >TNC.
> >

Hi Steve -- details on what you are looking for were published in 1991.

Cheers - Greg

This abstract is found in cnc10.html (1991 CNC San Jose, CA)

Multi-Drop KISS Operation

by Karl Medcalf, WK5M
Abstract: John Wiseman (G8PBQ) has developed a multi-drop KISS protocol, allowing several TNCs to be
connected to a single serial I/O port while operating KISS mode.

Then you can never go wrong with:

This abstract is found in cnc06.html

The KISS TNC: A Simple Host-to-TNC Communications Protocol
by Mike Chepponis, K3MC, Phil Karn, KA9Q
Abstract: The KISS TNC provides direct computer to TNC communication using a simple protocol described here.
Many TNCs now implement it, including the TAPR TNC-1 and TNC-2 (and their clones), the venerable VADCG TNC, the
AEA PK-232/PK-87 and all TNCs in the Kantronics line. KISS has quickly become the protocol of choice for TCP/IP
operation and multi-connect BBS software.

93. Re: G8BPQ KISS driver for NOS and Linux?

From: koster@mdd.comm.mot.com (Ken Koster)
Date: Wed, 23 Aug 95 09:57:10 PDT
To: karn@qualcomm.com, strohs@halcyon.com
Cc: netsig@tapr.org, tcp-group@UCSD.EDU, nos-bbs@hydra.carleton.ca
Message-ID: <9508231657.AA08838@fh34c.mdd.comm.mot.com>
Rendered body type: text/plain

>
> >The problem we appear to be having is that noise on the very long RS-232
> >lines between the host PC and the KISS TNC appear to be resetting the TNC,
>
> The proper solution is to fix your RS-232 cable...
>
> Phil

We would Phil, but they're about 35 miles long. :-)

The two TNCs are located at a USWest cellsite about 35 miles from the switch. The problem is the async cards on the T1 go crazy when the microwave link between the sites gets noisy.

Eventually we'll install another switch at this site and the problem will go away (as it has at other sites) but Steve is looking for short term solutions.

Ken, N7IPB

94. Re: [NETSIG:1914] G8BPQ KISS driver for NOS and Linux?

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Wed, 23 Aug 1995 15:34:46 -0300
To: netsig@tapr.org
Message-ID: <199508231834.PAA11415@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>The problem we appear to be having is that noise on the very long RS-232
>lines between the host PC and the KISS TNC appear to be resetting the TNC,
>putting it into weird states and changing the parameters. It appears that
>G8BPQ KISS would eliminate this problem.
>
>--
>Steve Stroh N8GNJ   strohs@halcyon.com
>Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org
>

Steve, it might be better to "fix" the line problem.
At one of my node sites I have a tnc located more than 500ft away from the main stack in another building. I connect it to the matrix using wireline

modems (4-wire). Mine are Gandalf LDS and were donated,
but there are lots out there at flea-markets for $10 or less.
These are running fine at 9600b and perhaps would do more but are ideal for
my application.

73 - Ron ve1aic

95. Re: [NETSIG:1920] Re: G8BPQ KISS driver for NOS and Linux?

From: Bob Nielsen <nielsen@primenet.com>
Date: Wed, 23 Aug 1995 12:22:37 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.950823121537.86C-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

On Wed, 23 Aug 1995, Charles Brabham wrote:

> According to Steve...
> >
> >I recently read that G8BPQ developed a version of TNC2 KISS that supports
> >a simple checksumming method to avoid invalid data being received by a
> >TNC.
> >
> >The problem we appear to be having is that noise on the very long RS-232
> >lines between the host PC and the KISS TNC appear to be resetting the TNC,
> >putting it into weird states and changing the parameters. It appears that
> >G8BPQ KISS would eliminate this problem.
> >
>
> I've used BPQ's multidropped KISS with a compatable TNC (AEA PK-96) for
> several months now, and it just runs and runs with no attention required on
> my part.
>
> Even though I only am using one TNC on this port, the multidropped KISS's
> Polling and Checksum features has given this setup reliability I had previously
> only enjoyed with my DRSI cards. BPQ multidropped KISS was originally
> developed to allow several TNC's to share a single COM port. What I'm saying
> here is that it's worth using, even on single TNC's.
>
> I never have to Reset, Re-KISS, or Re-start that TNC. It just chugs right
> along with no problems whatsoever.

In any situation where the TNC is only going to be used in KISS mode, a
dedictated EPROM is highly desirable. The BPQ multidropped KISS does
appear to have advantages for some applications, but if it can't be used,
even the original K3MC variety is much better than using a normal TNC
eprom and putting into KISS mode (and finding later that it has
mysteriously dropped out of KISS). And it definitely is compatible with
Linux.

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen   AX.25: w6swe@wb7tpy.az.usa.noam

96. Re: Polled Kiss

From: dme@ingersoll.com (Dave Ewaldz)
Date: Wed, 23 Aug 1995 15:36:14 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <m0slHqh-0001ghC@netmail>
Rendered body type: text/plain

A polled kiss driver is in the latest Jnos 1.10x versions.
I compiled it in, burned the eprom image included in the latest BPQ package,
and it worked with no hitches. There are some docs on this in the Jnos release
notes describing the interface attach syntax.
It does seem to work well here.
Good Luck.
73 Dave N9HKM

97. Re: [NETSIG:1917] Re: Diodes or Better.

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 24 Aug 95 07:35:26 EDT
To: netsig@tapr.org
Message-ID: <15021573.1d12@ram.net>
Rendered body type: text/plain

>My apologies, Tom, if I remember this wrong. It's been several years since
>I read all the details.
>
>
>Gary McDuffie, Sr. - AG0N
>mcduffie@hannibal.wncc.cc.ne.us
>AG0N@AG0N.#WNE.NE.USA.NOAM
>

Gary,

You were right on target on all points.

Thanks!

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

98. Network Evaluation

From: tmoulton@ram.net (Tom Moulton)
Date: Thu, 24 Aug 95 08:33:26 EDT
To: netsig@tapr.org (tapr netsig)
Message-ID: <15021573.1d13@ram.net>
Rendered body type: text/plain

The following is a short list of items that should be evaluated
to measure how well a network performs.

I have also provided a suggested method for evaluating each item.

This is not a complete list and should be expanded before anyone
claims victory or defeat.

Let's quickly identify the items that most of us agree upon and
then add items and discuss the points of contention. There could
be cases where a test may not apply for one solution.

Please keep in mind that when any of us suggest a feature or test
that our personal preferences will bias our suggestions slightly
and that there may be a collection of tests that we may need
to take a step back from and change into new tests to better
fit all the networks we will evaluate.

A) Network Performance:

1) Maximum Throughput	Pingpong/IP Ping/ZModem
2) Max # of Users on user port	Few TNC's/Multiconnect
3) Max # of Users on a Backbone Link	Many Users via 1 Node
4) Network Overhead. Per packet and Maintenance	Monitor/System Docs
5) Time to Live for Data after Disconnect	System Docs/Developer

B) Network Reliability

1) Error Correction at all transmission points	System Docs/Developer
2) Time to adapt to Node Failure	System Docs/Sysops
3) Time to recover - Node restored	System Docs/Sysops
4) Time to recover - Band Openings	System Docs/Sysops
5) Problem avoidance - Band Openings	System Docs/Sysops

C) Network Maintainability

1) Configurability - EPROM	System Docs
2) Configurability - Remotely	System Docs
3) Network Management Tools available	System Docs

D) Technical Limitations

1) Number of Platforms	System Docs
2) Max # of nodes in entire network	System Docs/Developer
3) Max # of hops for network level connect	System Docs/Sysops
4) Support Connected Mode AX25	System Docs
5) Support UI Mode AX25	System Docs
6) Support Any PID	System Docs

E) User Interface

1) Steps to connect to remote station	User Docs

```
   2) Caller ID                                  System Docs
   3) Fully Transparent Connections              System Docs
   4) Backbone Protocol Description              System Docs
   5) Custom Applications                        System Docs


_____________________________________
Thomas A. Moulton, W2VY     RAM Mobile Data
w2vy@ram.net                (908) 602-5227
```

99. Re: ROSE and misc

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Thu, 24 Aug 1995 02:59:22 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0slY8C-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

>

Carrying on the discussion...

> >First, my opinion is that the gosh awful numbers that have to be entered
> >with the call sign would be a royal pain to remember and use.
>
> Learning one number for a person has got to be better than a series of
> connect commands to node hop there...

The multiple hops is indeed a pain. We have our network configured with the idea that a.) if a node is in the list you should be able to connect to it. And b.) 3 hops is a good tradeoff between reliability and distance so that's what the standard range of a working hop would be. I say "working", because probably only 2/3's of the hops would "work".

Still, the number thing doesn't seem friendly. Is there a way to get a list of recognized numbers from the system? Is there a way to "alias" numbers with easy to remember strings or words?

Is it possible, in ROSE, to work around a down link without requiring re-configuration to use alternate paths?   Thanks to the clue about disabling call-sign validation and using SSID's with node names we are now able to force connections on the VHF side in the event the UHF backbone fails. (ie. Going from GTF to BIL usually routes on UHF via Livingston. During the hot days of summer that UHF paths goes away which isn't surprising since it's 130 miles through two mountain peaks. At those times I can issue, from GTF, a command to C BIL-1 and have a connection made on the old 145.010 network.)

> When a connection is dropped all data is flushed from the entire network,
> no wasted bandwidth while the network continues to deliver data for a failed
> connection. (Was most notable before bbs's had DUP message defenses/MID)

My NOS system does a lot of that now. But that's a problem I can (and intend to) fix here which is independent of the network.

When a user disconnects from a NetRom node some of the L4 (L3?) connects will stay alive for a while but that only results in a few inconsequential keep-alive polls.

> The throughput for ROSE is about twice that of NetRom, mostly due to the
> fact that ROSE relies upon the end user for the transport protocol.

I don't understand this. My view of ROSE is that it's like a flatbed train car. Ready to haul any product with minimal overhead. Where NetRom would be like a passenger car with the added overhead of seats, etc. Getting rid of the header overhead should help but I don't see how it can be that extreme.

> We could go on, but I'll stop now and see if you want to discuss it more...

You enjoy discussing your work. I enjoy learning about it. Let's keep it going.

> It would be nice if there were an X.25 interface on NOS to talk to ROSE via
> a level 3 link, but not required.

I am imagining that having a ROSE (X.25?) layer in NOS would allow multiple NOS systems to form a ROSE network with a single ROSE node (Tiny 2 EPROM?) at a elevated location. In doing so they would be able to pass data

more efficiently than even using the AX25 mode of the X1J IP routers. Is
that true?

> Thomas A. Moulton, W2VY   RAM Mobile Data

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

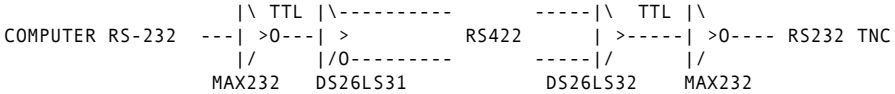
100. Re: G8BPQ KISS driver for NOS and Linux?

From: Don Russ <donr@mdsroc.com>
Date: Thu, 24 Aug 1995 14:32:26 -0400
To: netsig@tapr.org
Message-ID: <199508241832.OAA02528@mdsroc.com>
Rendered body type: text/plain

At 12:58 PM 8/24/95 -0500, you wrote:
>>
>>The problem we appear to be having is that noise on the very long RS-232
>>lines between the host PC and the KISS TNC appear to be resetting the TNC,
>>putting it into weird states and changing the parameters. It appears that
>>G8BPQ KISS would eliminate this problem.
>>
>>--
>>Steve Stroh N8GNJ   strohs@halcyon.com
>>Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org
>>
>
>Steve, it might be better to "fix" the line problem.
>At one of my node sites I have a tnc located more than 500ft away from the
>main stack in another building. I connect it to the matrix using wireline
>modems (4-wire). Mine are Gandalf LDS and were donated,
>but there are lots out there at flea-markets for $10 or less.
>These are running fine at 9600b and perhaps would do more but are ideal for
>my application.
>
>73 - Ron ve1aic
>

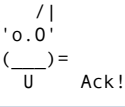
A better solution would be to implement EIA-422, RS-422 drivers and
receivers and RF bypass them. The chips cost very little and run off 5
volts. The problem is that they require two wires each doubling the number
of wires needed.
The standard allows for over 1 KM of wire and 1.5 Mega bits per second. We
are implementing this on a node with a 500' run and 9 wires. Try the
DS26LS31 and DS26LS32. There are a dozen or so manufacturers such as
National, Motorola, TI.

To interface it to RS232 you will need to have an RS-232 to TTL chip and I
recommend the MAX232. This is a ham project not for appliance operators.



The KISS parms can be screwed up by noise on the line. There are no CRC
checks on parm updates. Also note that older versions of KISS would
spontainiously reset under some conditions. I always use a dedicated KISS
PROM of the latest version from TAPR. G8BPQ's Multi-drop addressing may
stop this but it won't stop bad packets caused by noise on the line. I'd
recommend fixing the problem.

Hope this helps.
Don Russ   Microwave Data Systems
Advanced Development Engineer   a California Microwave Co.
N2CZL@WB2PSI.wny.ny.usa.na   donr@mdsroc.com



SUPPORT AMSAT

101. Re: [NETSIG:1929] Re: ROSE and misc

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 25 Aug 95 08:28:14 EDT

To: netsig@tapr.org
Message-ID: <15021573.1d1a@ram.net>
Rendered body type: text/plain

>From: Bill Vodall <vodall@bigsky.dillon.mt.us>
>
>Carrying on the discussion...
>
>The multiple hops is indeed a pain. We have our network configured with
>the idea that a.) if a node is in the list you should be able to connect
>to it. And b.) 3 hops is a good tradeoff between reliability and distance
>so that's what the standard range of a working hop would be. I say "working
>",
>because probably only 2/3's of the hops would "work".
>
>Still, the number thing doesn't seem friendly. Is there a way to get a list
>of recognized numbers from the system? Is there a way to "alias" numbers wi
>th
>easy to remember strings or words?

At ths end of my messages (.sig) I include my phone and fax numbers,
wouldn't it be less friendly if you needed to get the Chicago operator
who would get the New York operator who would get the Bloomfield operator
who would ring my phone?

The beauty of the number is no matter where you are in the network you can
always reach me without having to know the topology between us.

An alias can be as cryptic... and callsigns are no good for network exit
points because people upgrade, move, die so callsigns change, but the address
will remain constant.

The number of hops working... This is due to the internal transpot protocol
used within TheNet, I will explain more below.

ROSE doesn't have one, it relied upon the user for that, BUT ROSE will
make a best effort to not loose data and will notify the user (or disconnect)
if there is a CHANCE that data was lost.

This follows the ISO and Internet models of networking, THE TRANSPORT
PROTOCOL SHOULD ONLY RESIDE AT THE END POINTS.

>
>Is it possible, in ROSE, to work around a down link without requiring
>re-configuration to use alternate paths?   Thanks to the clue about

You mean to force a secondary path to be used? No but you should only
configure known good paths. If it is flakey there is a timer which will
keep it down for a time period (default 15 mins)

>> The throughput for ROSE is about twice that of NetRom, mostly due to the
>> fact that ROSE relies upon the end user for the transport protocol.
>
>I don't understand this. My view of ROSE is that it's like a flatbed
>train car. Ready to haul any product with minimal overhead. Where NetRom
>would be like a passenger car with the added overhead of seats, etc.
>Getting rid of the header overhead should help but I don't see how it can
>be that extreme.
>

If we have a train going coast to coast ROSE would put all the boxes on in
New York and let them stay there until San Fransisco.

NetRom on the other hand with the Transport protocol (L4) would take each
box off and put it back on every 3 stations (using your numbers) and then
send a telegraph to the previous station saying to was received.

The real difference is that ROSE does all of the ACKs hop by hop and NetRom
will do ACKs for L2 and L3 hop by hop, but the L4 ACKs will travel 3 (or
more) hops backwards before more data may be sent.

>I am imagining that having a ROSE (X.25?) layer in NOS would allow multiple
>NOS systems to form a ROSE network with a single ROSE node (Tiny 2 EPROM?)
>at a elevated location. In doing so they would be able to pass data
>more efficiently than even using the AX25 mode of the X1J IP routers. Is
>that true?
>

They can do that now using the AX25 and vc mode in currently deployed ROSE
switches and in Ver 3.7 and above they will be able to use Datagram Mode

(aka UI frames). I do not know what the performance difference would be
between X1J/IP and ROSE, but one point is that with ROSE all the routing
is done by the NOS boxes not the network (NOS box specifies the ROSE address
it wants the frame sent to)

I just sent a message to tcp-group@ucsd.edu about UI mode, which I will
forward here as well.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

102. Forward: Re:(2) roaming, and routing

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 25 Aug 95 08:30:51 EDT
To: netsig@tapr.org (tapr netsig)
Message-ID: <15021573.1d1b@ram.net>
Rendered body type: text/plain

------- Redirected Message -------
From: tmoulton@ram.net (Tom Moulton)
Subject: Re:(2) roaming, and routing
Date: Thu, 24 Aug 95 18:05:52 EDT
Reply-To: mailfail@UCSD.EDU
To: mailfail@ucsd.edu
Cc: gateways@mpg.phys.hawaii.edu, tcp-group@ucsd.edu
Message-Id: <15021573.1d19@ram.net>

>Hi Thomas, it sounds like your work may not involve IP, but by all means,
>please do describe it a bit or throw out some pointers to more info.

You are right is has nothing to do with IP exclusively, but a Level 1
handling and routing of UI frames.

It what started out as a method for sending CQ and Mail_For beacons through
the network and has grown to do a lot more.

If you were to transmit a frame:

W2VY>CQ,W2VY-3,201744 <UI> Data

It would be received by the W2VY-3 ROSE switch and forwarded to the ROSE
Switch that was at address 201744 and then sent out:

W2VY>CQ,201338,N2DSY-3* <UI> Data

These switches can be any two points within a ROSE Network.

This works now in the soon to be released version 3.7

The next extension will be to be able to send a UI into a predefined
destination/address and have the packet duplicated and sent out a number of
switch ports.

One example would be to send APRS data to all the ROSE User ports on APRS
frequencies another example would be to send ARP frames to all the local IP
channels. And if you changed frequencies/locations you could re-send your ARP

frame to declair your physical location within the network.

Remember that ROSE passes the PID transparently for UI and connected mode
frames as well.

Additional ideas are welcome.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

103. Re: [NETSIG:1932] Forward: Re:(2) roaming, and routing

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 25 Aug 1995 08:53:54 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199508251609.LAA05447@sys1.tapr.org>
Rendered body type: text/plain

Are you saying BBSes can now send their MAIL_FOR beacons to specific nodes
throughout the ROSE network?

73 de Jack

At 08:44 AM 8/25/95 -0500, Tom Moulton wrote:
>
>------- Redirected Message -------
>From: tmoulton@ram.net (Tom Moulton)
>Subject: Re:(2) roaming, and routing
>Date: Thu, 24 Aug 95 18:05:52 EDT
>Reply-To: mailfail@UCSD.EDU
>To: mailfail@ucsd.edu
>Cc: gateways@mpg.phys.hawaii.edu, tcp-group@ucsd.edu
>Message-Id: <15021573.1d19@ram.net>
>
>>Hi Thomas, it sounds like your work may not involve IP, but by all means,
>>please do describe it a bit or throw out some pointers to more info.
>
>You are right is has nothing to do with IP exclusively, but a Level 1
>handling and routing of UI frames.
>
>It what started out as a method for sending CQ and Mail_For beacons through
>the network and has grown to do a lot more.
>
>If you were to transmit a frame:
>
>W2VY>CQ,W2VY-3,201744 <UI> Data
>
>It would be received by the W2VY-3 ROSE switch and forwarded to the ROSE
>Switch that was at address 201744 and then sent out:
>
>W2VY>CQ,201338,N2DSY-3* <UI> Data
>
>These switches can be any two points within a ROSE Network.
>
>This works now in the soon to be released version 3.7
>
>The next extension will be to be able to send a UI into a predefined
>destination/address and have the packet duplicated and sent out a number of
>switch ports.
>
>One example would be to send APRS data to all the ROSE User ports on APRS
>frequencies another example would be to send ARP frames to all the local IP
>channels. And if you changed frequencies/locations you could re-send your ARP
>
>frame to declair your physical location within the network.
>
>Remember that ROSE passes the PID transparently for UI and connected mode
>frames as well.
>
>Additional ideas are welcome.
>
>
>_____________________________________
>Thomas A. Moulton, W2VY   RAM Mobile Data
>w2vy@ram.net   (908) 602-5227
>
>

104. Re: [NETSIG:1930] Re: G8BPQ KISS driver for NOS and Linux?

From: paul@paccomm.com
Date: Fri, 25 Aug 95 12:08:26 UTC
To: netsig@tapr.org
Message-ID: <4383@paccomm.com>
Rendered body type: text/plain

Another way to do this is use RS-232 - CoaxLAN adaptor. It can
talk 38.4kbps over runs of 2000'. It can also hook directly into
your X1J stack when running CoaxLAN throughout (SPIRIT-2's have
built-in CoaxLAN, TINY-2's have it added as an adaptor).

Not an advert. just presenting another option.....   :-)

~~~~~~   .
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980 |\
Fax:+1 (813) 872-8696   /| \
Views expressed here are not necessarily those of PacComm / |--\
Don't surf the net, SAIL it!   / | * \
~~~~~~

```
Captain of S/V "Spindrift", Dunedin, FL.                 /   |----\
Catalina 36: Tall rig (58'), Winged Keel (4' 2"),       /    |     \
Full batten main, Boston Whaler dinghy.                /-----|------` |
PacComm Packet Radio Systems                          \------`--------]
4413 N. Hesperides St., Tampa, FL 33614-7618           \_____________/.__.
                                                     ~~~~~~~~~~~~~~~~~~~~~~~
```

105. Re: [NETSIG:1934] Re: G8BPQ KISS driver for NOS and Linux?

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 25 Aug 95 14:10:26 EDT
To: netsig@tapr.org
Message-ID: <15021573.1d24@ram.net>
Rendered body type: text/plain

The funny thing is that the original problem dealt with microwave
equipment that (I would guess) doesn't provide copper end to end...

so short haul modems and coax lan won't work...

better try an audio channel and a pair of async error correcting modems
(2400 or above with mnp)

I think this would fit the bill to 'fix' the copper...

```
_____________________________________________
Thomas A. Moulton, W2VY     RAM Mobile Data
w2vy@ram.net                (908) 602-5227
```

106. Re: [NETSIG:1933] Re: Forward: Re:(2) roaming, and routing

From: tmoulton@ram.net (Tom Moulton)
Date: Fri, 25 Aug 95 14:17:18 EDT
To: netsig@tapr.org
Message-ID: <15021573.1d25@ram.net>
Rendered body type: text/plain

```
>
>Are you saying BBSes can now send their MAIL_FOR beacons to  specific nodes
>throughout the ROSE network?
>
>73 de Jack
>
```

Yes.

When the Multicasting is done it will also be able to use one of the
Broadcast Protocols for the same BBS's to send the Bulletin traffic.

It may increase some kinds of traffic, but will allow reduction of other
types of traffic.

If someone abuses the feature there is always the LidList...

```
_____________________________________________
Thomas A. Moulton, W2VY     RAM Mobile Data
w2vy@ram.net                (908) 602-5227
```

107. New 56KB Modem, 1995 DCC Technical Paper

From: bobm@mindspring.com (Bob Merritt KA4BYP)
Date: Sun, 27 Aug 1995 17:38:54 -0500
To: netsig@tapr.org
Message-ID: <199508272147.RAA03121@dylan.mindspring.com>
Rendered body type: text/plain

I've just updated the GRAPES Web Pages to include Dale Heatherington's 1995
DCC technical paper on his new modem design...

http://www.mindspring.com/~bobm/grapes/grapes.html

The modems are in beta test, and may be in production by late 95 or early 96.

73/Bob

```
-----
Bob Merritt KA4BYP           "Wide World of Packet Radio"
PO Box 185                        http://www.mindspring.com/~bobm/
Griffin, GA   30224
```

108. Re: [NETSIG:1928] Network Evaluation

From: tmoulton@ram.net (Tom Moulton)
Date: Mon, 28 Aug 95 09:25:36 EDT
To: netsig@tapr.org
Message-ID: <15021573.1d39@ram.net>
Rendered body type: text/plain

I have been suprised at the lack of response to my proposed list of
methods to evaluate various aspects of the networking solutions available.

This means that either;

    A) I covered everything (NOT! I have thought of a couple of other items)
    B) Nobody cares to really evaluate what is 'Best' or 'Better'
    C) My message got lost

If it is C please tell me.

If it is A - Do we have anyone who would like to start testing?
             (The best way to figure what else is missing might be to
              start some testing...)

I just thought of one other thing... If you think that I stacked the deck
for ROSE, guess again. There are some areas where ROSE DOES need improvement!

I do belive that even now in the overall picture ROSE has an edge. (IMHO)

If you want a challenge - figure out what other things ROSE doesn't do well.

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

109. Re: [NETSIG:1910] CQ CQ CQ

From: rdonnell@eskimo.com (Robert Donnell)
Date: Mon, 28 Aug 1995 07:10:40 -0700
To: netsig@tapr.org
Message-ID: <199508281409.HAA18642@tia1.eskimo.com>
Rendered body type: text/plain

Hi Bill,

>
>
>CQ CQ?
>
>
>Ever call CQ on a remote node?   I have often.
>
>
>Ever get an answer?   I haven't...
>

I have, but it's been a few years since I've tried. Mainly on Field Day

>
>I bet most folks don't know the "two" ways of answering a CQ.

1. Commanding the node to make a CQ call for you
2. Digipeating through a station (if needed) with your unproto destination
call set to 'CQ'.

>
>It would, IMHO, be neat if the packet terminal program writers and
>developers of the next generation of client programs were to have
>options to monitor for CQ's and alert the operator (ding ding ding)
>or log the calls for later reference.   Being able to actually connect
>easily to a living person in some remote location would bring a whole
>new dimension to node hopping.

If you're an AEA user take a look at the MTO and MBELL commands.
If you're a 'generic TNC2' user (Paccom, MFJ, TAPR, etc) look at the LCALLS
and BUDLIST commands.
I'm sure Kantronics has it too, but I don't have one of their manuals in hand.

This capability has been available in the TNCs for a long time - at least 5
years. You just have to research the TNC manual - and remember to disable
it when you don't want it!

>
>Bill
>
>Reply-To: vodall@bigsky.dillon.mt.us
>Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>
>

Hope that helps! 73, Bob (ex-AEA tech support)

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
----

110. Re: [NETSIG:1934] Re: G8BPQ KISS driver for NOS and Linux?

From: "John M. Wilcox" <0005018901@mcimail.com>
Date: Mon, 28 Aug 95 01:19 EST
To: netsig <netsig@tapr.org>
Message-ID: <32950828061923/0005018901PK5EM@MCIMAIL.COM>
Rendered body type: text/plain

-------- REPLY, Original message follows --------
>
> Another way to do this is use RS-232 - CoaxLAN adaptor. It can
> talk 38.4kbps over runs of 2000'. It can also hook directly into
> your X1J stack when running CoaxLAN throughout (SPIRIT-2's have
> built-in CoaxLAN, TINY-2's have it added as an adaptor).
-------- REPLY, End of original message --------

There used to be a little company in New Jersey that made diode switches
etc. I've lost the
phone/address (darn!). Can some kind soul recommend/suggest where matrix
boards can
be purchased? Thanks

John/NS1Z
5018901@mcimail.com

111. OTA Wireless Study

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Mon, 28 Aug 1995 07:49:54 -0700
To: netsig@tapr.org (TAPR Networking List),
        fccreg@tapr.org (TAPR FCC Regulatory List)
Message-ID: <v02130508ac6786e543f2@[204.118.182.22]>
Rendered body type: text/plain

TAPR Lists:

        This is to let you know that the recent Office of Technology
Accessment's "Wireless Technologies and the National Information
Infrastructure" study has just been posted in electronic form at their WWW
site at http://www.ota.gov/. It is available as a text file without the
illustrations or as an Adobe Acrobat file with complete illustrations.
        You can also ftp the study using the following URL which points to
the Acrobat version:

                <ftp://otabbs.ota.gov/pub/pdf/wireless/>

        This report is a major 290 page study which examines the role that
wireless technologies will play in the evolving National Information
Infrastructure (NII), and identifies the challenges that policymakers,
regulators, and wireless service providers will face as they begin to
combine wireless systems with existing wireline networks.

-- Dewayne

Dewayne Hendricks, WA8DZP ! CIS: 75210,10   AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204   ! AOL: HENDRICKS
Fax: (510) 770-9854   ! WWW: http://www.warpspeed.com/
----

112. Re: [NETSIG:1914] G8BPQ KISS driver for NOS and Linux?

From: pipe2@oeonline.com
Date: Mon, 28 Aug 95 20:12 EDT

To: netsig@tapr.org
Message-ID: <m0snEIC-0009hrC@oeonline.oeonline.com>
Rendered body type: text/plain

Here is a simpilar, better, and far more reliable solution to your problem...

Buy two MAX488 (Maxim chips, if you hadn't already guessed :-). They run about $3 each in DigiKey's catalog. Buy two MAX233's or MAX232's (The 233 needs no external capacitors, the 232 does. The 232 is a few bucks cheaper). These run about $5-8 from DigiKey. Now wire the TTL out from the 488 to the TTL in of the 232/233, and vice versa. Build two units like this and give the each a +5v power supply. You now have a SLEW RATE LIMITED (i.e. noise reducing and less effected by external noise) RS-422 (current loop) null modem cable or serial extension cable. RS-422 can easily handle line lengths of up to 4000', and it can go (with the chips mentioned) up to 250kbps. You can use el cheapo thermostat wire for the RS-422, but you woul be better off using Level 3 wire for the few cents/foot more. This should solve your problem AT THE PROBLEM, instead of just making your system tolerate the problem. Total cost should be under $30, so it is definatly worth a shot!

-Bill kb8wyp

>
>I recently read that G8BPQ developed a version of TNC2 KISS that supports
>a simple checksumming method to avoid invalid data being received by a
>TNC.
>
>The problem we appear to be having is that noise on the very long RS-232
>lines between the host PC and the KISS TNC appear to be resetting the TNC,
>putting it into weird states and changing the parameters. It appears that
>G8BPQ KISS would eliminate this problem.
>
>The problem is that we are not aware of a "G8BPQ KISS" driver for NOS or
>Linux. Is anyone aware of one?
>
>Thanks for any help that anyone can offer on this subject.
>
>Steve
>
>--
>Steve Stroh N8GNJ   strohs@halcyon.com
>Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org
>
>
>

113. Re: CQ CQ CQ

From: shawnpat@sierra.net (Shawn Skinner)
Date: Tue, 29 Aug 1995 01:52:30 -0700
To: netsig@tapr.org
Message-ID: <199508290158.AA16572@diamond.sierra.net>
Rendered body type: text/plain

>>
>>I bet most folks don't know the "two" ways of answering a CQ.
>
>1. Commanding the node to make a CQ call for you
>2. Digipeating through a station (if needed) with your unproto destination
>call set to 'CQ'.

3. Connect to the node, then connect to the exact call shown in the
   CQ, ie; if the call was kb5xtw-13> cq: any body... , then c kb5xtw-13.
   This works with TN2.xx and TNX1x.x (the net) versions.

>>It would, IMHO, be neat if the packet terminal program writers and
>>developers of the next generation of client programs were to have
>>options to monitor for CQ's and alert the operator (ding ding ding)
>>or log the calls for later reference.   Being able to actually connect
>>easily to a living person in some remote location would bring a whole
>>new dimension to node hopping.

Certainly would help those who do not monitor the air.

73 de Shawn, N7XBM.

>>
>>Bill
>>

```
>>Reply-To:       vodall@bigsky.dillon.mt.us
>>Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>>
```

114. Re: [NETSIG:1921] IPv6 (IPng) .....

From: "Brian A. Lantz" <brian@lantz.com>
Date: Mon, 28 Aug 1995 22:26:15 +0100
To: TAPR NETSIG Mailing List <netsig@tapr.org>
Message-ID: <Pine.3.89.9508282206.H4068-0100000@lantz.com>
Rendered body type: text/plain

Paul Evans wrote:

> Anybody got any comments about the extended address IP that's
> proposed as IPv6 or IPng (next generation) and what effect
> it'll have on amateur TCP/IP over the air ??????
>
> Anybody got any detail - all I can find is written description?
>
> I presume Phil (NOS) and Brian (TNOS) know of this proposed
> change to how TCP/IP works in the stack?

There will need to be a rework of a lot of code to make it handle IPv5
AND IPv6, but it won't be a show stopper.....

> Are there any issues which would affect use of it on TheNet or
> ROSE ??????

ROSE, no, since it does NOT route IP, just passes it along without analysis.

TheNet's IP router will need reworked code, also, for IPv6 in order for
it to pass/route IPv6 packets.

There is NO big rush, commercially or otherwise, so this is (at this
point) a minor concern.

```
------------------------------------------------------------
Brian A. Lantz     http://www.lantz.com     brian@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

115. TNN & Flexnet

From: Fredrik Bonde <e89_bond@etek.chalmers.se>
Date: Tue, 29 Aug 1995 06:42:35 +0200 (MET DST)
To: netsig@tapr.org
Message-ID: <9508290442.AA06130@quarl0.etek.chalmers.se>
Rendered body type: text/plain

Hi there,

Sorry if I missed this info in a previous mail. I'm looking for
TheNetNode (1.56 or newer) and Flexnet. Please tell me where to find it.
Thanks!

73 de Fredrik

```
       ------------------------------------------------------------

    I likhet med Mozart, Beethoven och en kille som heter Gustavsson
      i ]motfors, har jag vigt mitt liv }t musik.
                                                    M B Tretow

 Chalmers   I  Fredrik Bonde          I  e-post: e89_bond@etek.chalmers.se
 Tekniska   I  Gibraltargatan 82-149  I  packet: SM6UBC @ SK6YW.O.SWE.EU
 H|gskola   I  412 79 G|teborg        I     tel: +46-(0)31-20 88 76
            I  SWEDEN                 I

       ------------------------------------------------------------
```

116. Re: [NETSIG:1940] Re: G8BPQ KISS driver for NOS and Linux?

From: Andrew Funk <kb7uv@panix.com>
Date: Tue, 29 Aug 1995 20:04:34 -0400
To: netsig@tapr.org
Cc: 5018901@mcimail.com
Message-ID: <199508300004.UAA06340@panix3.panix.com>
Rendered body type: text/plain

At 08:34 PM 8/28/95 -0500, John/NS1Z, 5018901@mcimail.com wrote:
>
>There used to be a little company in New Jersey that made diode switches
>etc. I've lost the
>phone/address (darn!). Can some kind soul recommend/suggest where matrix
>boards can
>be purchased? Thanks
>

Amateur Network Supply
Donald Rotolo, N2IRZ <73227.2644@compuserve.com>
--
 _____ Andrew Funk, KB7UV _____
| Tech Producer/Editor Internet: kb7uv@panix.com |
| WCBS-TV Channel 2 News http://www.webcom.com/~arfunk/ |
| New York, NY USA Writing for my self, not my employer! |

117. Re: [NETSIG:1943] Re: CQ CQ CQ

From: rdonnell@eskimo.com (Robert Donnell)
Date: Tue, 29 Aug 1995 18:34:27 -0700
To: netsig@tapr.org
Message-ID: <199508300132.SAA11216@tia1.eskimo.com>
Rendered body type: text/plain

>>>
>>>I bet most folks don't know the "two" ways of answering a CQ.
>>
>>1. Commanding the node to make a CQ call for you
>>2. Digipeating through a station (if needed) with your unproto destination
>>call set to 'CQ'.
>

oops - must have been late! I read "answering" as "calling" when I wrote
the reply!

73 all

Bob

  Bob Donnell, KD7NM bob@kd7nm.ampr.org rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator (206) 775-3651
---

118. Re: [NETSIG:1945] TNN & Flexnet

From: f1jkj@amsat.org (Laurent Ferracci - F1JKJ)
Date: Wed, 30 Aug 1995 22:44:43 +0200
To: netsig@tapr.org
Message-ID: <199508302044.WAA18191@unix10.pressimage.fr>
Rendered body type: text/plain

Hi,

>Sorry if I missed this info in a previous mail. I'm looking for
>TheNetNode (1.56 or newer) and Flexnet. Please tell me where to find it.

You'll find TheNetNode (together with any NORD><LINK software, such as their
BBS system, TF-DAMA drivers for PC or KISS TNCs...) on NORD><LINK's web site:
http://www.aball.de/~pg/nordlink

Concerning Flexnet, the PC version (PC/Flexnet) is not publicly available as
it is still in beta test.
The Eprom program for RMNC cards is not a beta version, but is not available
to the public neither. Contact a Flexnet distributor. A new version 3.3e has
just been released.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
       > F1JKJ@planete.net < Public Key on mail servers
         Fidonet 2:323/27.1
         Compuserve ID 100407,436

September 1995

Original source file: netsig.9509
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9509

1. NETSIG is still alive...

From: Steve Stroh <strohs@halcyon.com>
Date: Sun, 3 Sep 1995 08:28:36 -0700 (PDT)
To: TAPR Networking SIG List <netsig@tapr.org>
Message-ID: <Pine.ULT.3.91.950903082521.6668A-100000@coho.halcyon.com>
Rendered body type: text/plain

Just not very active at the moment. I imagine that most of the US has
more interesting things to do on a very nice (at least here in the Seattle
area) Labor Day weekend than post to an Internet mailing list... which is
as it should be.

Steve Stroh N8GNJ
NetSIG Co-Moderator
strohs@halcyon.com

---

2. Re: [NETSIG:1909] Re: Diodes or Better.

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Tue, 5 Sep 1995 18:31:54 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9509051850.D14634-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Bill, I will add a comment about the addressing scheme used in ROSE.

It is X.121 which gives you a lot of leeway as to how you set up your
addressing. Most areas follow the local telephone network addressing
as per part of the X.121 recommendation.

Also in this country most ROSE networks that I am familiar with have
taken to using 411 and 555 sufixes as common addresses for information
services.

In the Tampa Bay area you can get local network info at the 813411 address
and you will get state and out of state network information at the 813555
address.

Much the same thing has been done in other ROSE network areas. I connect
into non-ROSE networks and do not find this same facility, there either has
not been standardization in other networks, or they are keeping it a secret.

The usual observation from the locals is "pull a nodes list" well unless you
know exactly what each one of those nodes list names mean you are out in the
dark.

The addressing also lets a user move about the network and still connect back
to his/her home station, bbs or whatever with the only changes needed in the
connect process being knowledge of the local lan freq, and local switch call,
the distant switch address never changes, therefore, I can go to
different parts of the state here in Florida, or out to Texas, Oklahoma, or
other ROSE networks that have connectivity with Florida, and still only have
to know the lan freq and local switch call, MY X.121 address stays the same,
813877 or 813044 depending on what facility I am going to connect to.

I could even go to say Australia, which now is connected to the ROSE network
over the Internet via a TNOS site, and from any ROSE switch in Australia
connect to my system in Tampa, I only have to add one more addresss part,
that of the DNIC, which properly ID's the target country. The DNIC for the
USA is 3100 in this case.

I have gone to areas where I could get into Tampa traversing a NetRom
network to finally reach a ROSE switch, but getting across the NetRom
network was a real pain, I did NOT know the topography, so I had to pick
and probe until I finally gave up because the whole thing appeared to be a
study in futility.

That single command connect regardless of the size of the network is one
of the things that makes ROSE such a joy to communicate across, when I
connect to say wb5cqu out in Double Oak TX. I do not worry about all the
nodes or switches in between us, I just do the following

c wb5cqu v k0zxf-4 817491

Or if I do it from my TNOS box, which is ROSE aware:

c p2 wb5cqu @ 817491

No node hoping no connecing here, then there, then out or over.. Just one
connect and off it goes.

I am sure that you could build a network that would "know" where everyone is,
but I am not sure we have the bandwidth to deal with it right now. ROSE lets
you get almost that, and still lets you keep the equipment needs down to a
reasonable level.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:Costa Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

3. Re: [NETSIG:1949] NETSIG is still alive...

From: axxon@ibm.net
Date: Tue, 05 Sep 95 21:19:37
To: netsig@tapr.org
Message-ID: <9509060745.AA0026@slip35-17.il.us.ibm.net>
Rendered body type: text/plain

Hi from K3SXJ just in from a weekend camping trip. Name is Gary and
I live 40 miles East of Pittsburg in Blairsville,PA . I am the "Repeater
Trustee"(or better known as the only fool who will climb" of our club. We
have a site at 1800 feet on chestnut ridge over looking West Virgina,
Eastern Ohio and all of Western Pa. Our club runs an X1j node there. I
wanted to place a 9600 backbone system on 440 on our tower tying State
College and Waren Pa to us on a stack.(about 80 miles each way) Then into
Ohio and West Virgina again about 80 miles each. Each leg running 25 watts
with a 22 element K1FO beam. If the other sights also run at least the same
antenna gain and power I believe we could tie this area together. ??
comments or send this on to some one who could tnx Gary...

//---

// ARS : K3SJX
// axxon@ibm.net
// grobison@gpu.com
// " How to make your 486 in to an XT.....load Windows......
// " I remember the first time I used Windows...but I'm trying to forget...
// " God runs the universe under OS/2...

4. Duplex 9600 digital

From: JWELTON <jwelton.nur1@mail.unch.unc.edu>
Date: Wed, 6 Sep 95 13:56:00 -0500
To: netsig@tapr.org
Message-ID: <E80A4E3001F800A0@mail.unch.unc.edu>
Rendered body type: text/plain

We are considering a duplex 9600 B repeater for TCP/IP. I would be
interested in conversing with anyone who has implemented such a system. We
have a coordinated freq - 443.475 and I would like to investigate using the
TAPR II board for bit regeneration - I'm not sure this will run in a TCP/IP
environment.

73 N4SJW
John
Chapel Hill, NC

5. Re: [NETSIG:1952] Duplex 9600 digital

From: rdonnell@eskimo.com (Robert Donnell)
Date: Wed, 06 Sep 1995 17:55:37 -0700
To: netsig@tapr.org
Message-ID: <199509070053.RAA01644@tia1.eskimo.com>
Rendered body type: text/plain

>We are considering a duplex 9600 B repeater for TCP/IP. I would be
>interested in conversing with anyone who has implemented such a system. We
>have a coordinated freq - 443.475 and I would like to investigate using the
>TAPR II board for bit regeneration - I'm not sure this will run in a TCP/IP
>environment.
>
>73 N4SJW
>John
>Chapel Hill, NC
>
>

Hi John,

By all means the TAPR board works! We have 4 9600 baud repeaters up in this area, all using the TAPR modem. 3 repeaters on 440 MHz and 1 on 2 meters - all put up by the TCP/IP users in the area. You don't need a TNC at the repeater site at all, except perhaps for handling ID chores. The TAPR modem contains all the other needed circuitry to go from the RX path to the TX path, including DCD/PTT and a watchdog timer. Hope this helps!

73, Bob
Seattle, WA

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
---

6. Re: [NETSIG:1950] Re: Diodes or Better.

From: pipe2@oeonline.com
Date: Wed, 6 Sep 95 22:27 EDT
To: netsig@tapr.org
Message-ID: <m0sqWgF-0003CSC@oeonline.oeonline.com>
Rendered body type: text/plain

Do you know of a site where I can find the ROSE spec? I am working on a system (in spare time -- it's in very early stages) of a backbone system that can except ROSE-type functions (I like that users need not know all the hops, only the destination). I am hoping to get a few Mb/s over 10 gigs using a token passing protocol that I almost have working now. Only a few pesky bugs left in that part! Hopefully I can get the system to pass TCP/IP and *route* it, and allow ROSE connects for BBS links. The backbone protocol is a propreitary token passing protocol that eliminates the possibility of collisions so that 100% bandwidth is avaible to the network (i.e. no collision pauses).

        -Bill kb8wyp

>Bill, I will add a comment about the addressing scheme used in ROSE.
>
>It is X.121 which gives you a lot of leeway as to how you set up your
>addressing. Most areas follow the local telephone network addressing
>as per part of the X.121 recommendation.
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>Also in this country most ROSE networks that I am familiar with have
>taken to using 411 and 555 sufixes as common addresses for information
>services.
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>and you will get state and out of state network information at the 813555
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>into non-ROSE networks and do not find this same facility, there either has
>not been standardization in other networks, or they are keeping it a secret.
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>The usual observation from the locals is "pull a nodes list" well unless you
>know exactly what each one of those nodes list names mean you are out in the
>dark.
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>The addressing also lets a user move about the network and still connect back

>to his/her home station, bbs or whatever with the only changes needed in the
>connect process being knowledge of the local lan freq, and local switch call,
>the distant switch address never changes, therefore, I can go to
>different parts of the state here in Florida, or out to Texas, Oklahoma, or
>other ROSE networks that have connectivity with Florida, and still only have
>to know the lan freq and local switch call, MY X.121 address stays the same,
>813877 or 813044 depending on what facility I am going to connect to.
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>over the Internet via a TNOS site, and from any ROSE switch in Australia
>connect to my system in Tampa, I only have to add one more addresss part,
>that of the DNIC, which properly ID's the target country. The DNIC for the
>USA is 3100 in this case.
>
>I have gone to areas where I could get into Tampa traversing a NetRom
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>and probe until I finally gave up because the whole thing appeared to be a
>study in futility.
>
>That single command connect regardless of the size of the network is one
>of the things that makes ROSE such a joy to communicate across, when I
>connect to say wb5cqu out in Double Oak TX. I do not worry about all the
>nodes or switches in between us, I just do the following
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>c wb5cqu v k0zxf-4 817491
>
>Or if I do it from my TNOS box, which is ROSE aware:
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>c p2 wb5cqu @ 817491
>
>No node hoping no connecing here, then there, then out or over.. Just one
>connect and off it goes.
>
>I am sure that you could build a network that would "know" where everyone is,
>but I am not sure we have the bandwidth to deal with it right now. ROSE lets
>you get almost that, and still lets you keep the equipment needs down to a
>reasonable level.
>
>
>
>--
>   Chuck Hast   e-mail wchast@gateway.utilpart.com
>
>HAST CONSULTING Tampa FL.:
>Using radio for what it does best, Data Communications.
>
>Grupo Datapac Ltda:Costa Rica :
>Aplicando la radio al mundo de la comunicacion digital, extendiendo el
>mundo de la computacion a todo el planeta.
>
>
>Running OS/2 WARP and LINUX on these boxes.
>
>--
>Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
>Ampr.org kp4djt.ampr.org
>AX.121 3100813077
>--
>
>

7. [NETSIG:1950] Re: Diodes

From: steve.sims@totrbbs.radio.org (Steve Sims)
Date: Tue, 6 Sep 95 21:55:00 -0500
To: netsig@tapr.org
Message-ID: <1675.7.uupcb@totrbbs.radio.org>
Rendered body type: text/plain

I am quite intrigued by the ROSE network as you have described it. Is
there anybody that you know of that I can call or write to to get
connected to somebody on the rose network from my location in Tucker, Ga
? IE, What freq, etc...

Steve Sims, KS4EV or SESIMS@LANIER.COM
VOICE or FAX:770-414-0680

. OLX 2.1 TD . It's only a hobby ... only a hobby ... only a
. KMail 3.0aa

```
----
Top Of The Rock BBS - Lilburn, GA         SYSOP: Steve Diggs
Phone: +1 404 921 8687               Snailmail: 4181 Wash Lee Ct.
Lilburn, GA 30247-7440
```

8. Re: Duplex 9600 digital repeater

```
From: wa1jhk@ix.netcom.com (Dave Maciorowski)
Date: Thu, 07 Sep 1995 07:22:51 -0600
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199509071322.GAA08770@ix4.ix.netcom.com>
Rendered body type: text/plain
```

At 06:19 PM 9/6/95 -0500, JWELTON wrote:
>We are considering a duplex 9600 B repeater for TCP/IP. I would be
>interested in conversing with anyone who has implemented such a system. We
>have a coordinated freq - 443.475 and I would like to investigate using the
>TAPR II board for bit regeneration - I'm not sure this will run in a TCP/IP
>environment.

We have had a 9600 baud digital repeater on-the-air since last fall on 447.200 in the Denver area (Conifer Mtn, 35 miles west-southwest of Denver at 10,000 feet). In the last 100 days, we have transmitted more than 2.25 million packets thru the repeater with excellent error statistics. The repeater has eliminated the hidden-transmitter problem that we used to experience -- all stations in our coverage area can hear each other :-) A repeater is an appropriate solution for us where our few users are spread across a wide area.

The 447.200 repeater is currently part of the 44.20 backbone for northeast Colorado. An Internet/AMPRnet gateway and firewall operated by Ted, N0IAK, gives hams secure access to the Internet. The Internet gateway also connects the local Netrom network to other parts of the world.

The repeater is constructed from a Motorola Micor modified for full-duplex and digital operation, an MFJ 1270B TNC used as an identifier, and a TAPR 9600 baud modem with the bit-regenerator installed. Repeater control (required by the FCC) is provided by other repeater site equipment. Standard repeater construction techniques were used, eg. commercial duplexer, lightning protection, feedline and antenna -- I STRONGLY suggest using only commercial radio equipment!

Our repeater was the second to be installed in Colorado -- the first was the 447.250 on Pike's Peak serving 44.32. Two more repeaters are under construction to be installed in Boulder and Fort Collins.

I'd be happy to exchange ideas with you here on the list if others would like to listen-in, or you can e-mail me directly.

73,

Dave

p.s. For more info see the Colorado Amateur Radio Page at http://www.rmsd.com/hamradio or subscribe to our local discussion list (send a message to majordomo@rmsd.com with the command "subscribe mtntcp" in the text body).

```
-----
Dave Maciorowski, WA1JHK
Colorado Repeater Association, Inc.
  Serving the Colorado Front Range

Internet: wa1jhk@ix.netcom.com
AmprNet:  wa1jhk@bbs.n0iak.ampr.org
AX.25:    wa1jhk@n0iak.#neco.co.usa.noam
```

9. Re: [NETSIG:1952] Duplex 9600 digital

```
From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 7 Sep 1995 10:34:40 -0400
To: netsig@tapr.org
Message-ID: <199509071434.KAA12586@nadc.nadc.navy.mil>
Rendered body type: text/plain
```

JOhn,

I have a full duplex 9600 baud repeater running here in Philadelphia.

It uses two TEKK radios, the Tapr board with bit regen and clock options
in a pacom TNC, a 4 can duplexor, a brick 100Mw to 20W amplifier and
of course and antenna.

It works well. I have 3 users at the moment and More to come. The
full duplex approach for the most part solves the hidden transmitter
problem. It is on 440.0/445.0.

I would be glad to answer any other questions you may have.

This gives me an opportunity to bring up another point. The antenna I
am using is a comet tri-band model. It is a well constructed antenna
and I am using it on packet on 2, 220 and 440 with a triplexor. It worked
well (I thought) until I tried an experiment last week.

I am moving a 220 voice repeater to my house. Although I have a 220
ringo, in addition to the comet, I wanted to try the comet as it is
the highest antenna on the tower. I quickly realized that the comet
had problems. It appears there are severe lobes at close range in the
pattern. After talking to a friend about this he to confirmed that his
club had discontinued using a 440 comet in repeater service for the same
reason.

It is so bad that at 2-3 miles form the antenna you can find severe nulls
when walking with a handheld. I then switched the repeater to the ringo
and the condition improved greatly.

I would like to have other input on this. Since we seldom realize things
like this when running packet. It might explain why users find moving
their antenna a short distance makes such a great difference.

Doug

10. Re: Duplex 9600 digital

From: David Rush <rush@erg.sri.com>
Date: Thu, 07 Sep 1995 13:00:38 -0500
To: netsig@tapr.org
Message-ID: <9509071800.AA25566@alikazam.sprintcorp.com>
Rendered body type: text/plain

John:

>We are considering a duplex 9600 B repeater for TCP/IP. I would be
>interested in conversing with anyone who has implemented such a system. We
>have a coordinated freq - 443.475 and I would like to investigate using the

I hope you have a 2nd freq (one input freq, one output freq) for your
bit-spitter.

David, n0oxh, rush@erg.sri.com

11. Re: G8BPQ KISS driver for NOS and Linux?

From: Phil Karn <karn@qualcomm.com>
Date: Thu, 7 Sep 1995 15:53:39 -0700
To: strohs@halcyon.com
Cc: netsig@tapr.org, tcp-group@UCSD.EDU, nos-bbs@hydra.carleton.ca
Message-ID: <199509072253.PAA27955@servo.qualcomm.com>
Rendered body type: text/plain

>We'd like to, but it's a mixture of fiber, copper, and microwave over 30
>miles long. "Fixing it" is kind of out of our hands. I figured I'd get
>lightly toasted for that statement.

Sounds like you need some sort of ARQ protocol on your link. Simply adding
checksums isn't enough if your error rate is that high.

Phil

12. Re: [NETSIG:1957] Re: Duplex

From: JWELTON <jwelton.nur1@mail.unch.unc.edu>
Date: Fri, 8 Sep 95 10:09:00 -0500
To: netsig@tapr.org
Message-ID: <D478503001F800A0@mail.unch.unc.edu>
Rendered body type: text/plain

Doug,

Regarding the antenna issue, we are using a Hustler dual band that seems,
at the moment, to have good pattern in and around Univ. of North Carolina

campus and environs. The antenna is up on the 2nd tallest building abt
350-400 ft HAAT. Intermod is killing us right now (9 other public service
radios to compete with) but some new cavities should help.

On the hardward side, I'm hearing that 9.6 Kb duplex is relatively
straightforward with the TAPR II board. I'd like to address the software
issues, though. What operating system are you using. Ideally, we'd like to
keep the interface to our hardware transparent and use either visual basic
or other typical windows software to provide ARES support for moving data
around our system. We envision using the Tekks in the field to provide
portable digital support of ARES activities. This includes using databases
to relay specific information between field sites and command sites. I
haven't tried downloading the driver mentioned in June QST yet. Have you
used this or heard of anyone using this driver with Windows?

John N4SJW

13. RE: [NETSIG:1914] G8BPQ KISS driver for NOS and Linux?

From: bobsmith@mail.i2020.net (Robert L. Smith)
Date: Fri, 8 Sep 95 11:41:02 EDT
To: netsig@tapr.org
Message-ID: <Chameleon.950908114531.bobsmith@>
Rendered body type: text/plain

>
>The problem we appear to be having is that noise on the very long RS-232
>lines between the host PC and the KISS TNC appear to be resetting the TNC,
>putting it into weird states and changing the parameters. It appears that
>G8BPQ KISS would eliminate this problem.
>
>Steve Stroh N8GNJ   strohs@halcyon.com
>Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

Steve -

We tried a similar uwave link and had the same problem. Looked like every
time a bird landed on the dish the uwave link emitted a burst of noise which
eventually contained a 0xC0FFC0 string (kiss reset).

Solution - install a 'kiss only' prom in tnc. We are about to test x1j code for
this purpose cause may eventually run netrom serial over the link instead
of kiss, but that another day.

Incidently the tnc was a DRSI PK9600 in this case but same should apply
to other tapr clones.

  Robert L. Smith   804/745-1065   bobsmith@i2020.net
  Smith Machine Works, Inc.   wa4ypv@w4za.ampr.org

14. RE: [NETSIG:1902] Definition of a "network"

From: bobsmith@mail.i2020.net (Robert L. Smith)
Date: Fri, 8 Sep 95 09:34:49 EDT
To: john.ackermann@daytonOH.attgis.com
Message-ID: <Chameleon.950908112520.bobsmith@i2020.net>
Rendered body type: text/plain

>I'm trying to describe what a "network" is for my NOS book, and need input from
>those more knowledgeable about the formal definitions than I.

I admire your courage ;-)

>My view has always been that an IP network is a group of stations who can all
>communicate directly with one another. All those stations share a single
>network or subnet number.
>
>>From that, if you can only reach a station via a gateway, he's not part of
>your network. (OK, this ignores digis and other Real World Phenomena, but
>we're being technical here.)
>
>Also following from that, if local activity takes place on two frequencies,
>with perhaps a gateway linking them, each of those frequencies constitutes
>a network, and should have its own net or subnet number.
>
>I know that dynamic routing protocols can eliminate the need for strict
>subnetting, but do they change the fundamental definition?
>
>Am I taking too narrow a view? Should I say that full connectivity within
>a network is a good thing, but isn't required by the definition?

>

Yes, I think you trying to apply some restrictive definitions to "network" that
serve no real purpose, and which I think is what makes you uncomfortable enough
with the overall idea to lead to this posting to start with. I sense that what you
may be trying to communicate is some of the desirable CHARACTERISTICS
of certain implementations of LOCAL ip networks which should be considered by
users who are setting up such local networks to obtain best performance and
proper function. In view of my perceived audience for your book, i.e. to assist
the installers and users of AMPRNET ip networks with J/T/MFNOS (primarily)
RADIO path based implementations of tcp/ip, I believe that the subject
is an important section/chapter of the work. However, you should be careful
to define the applicable audience for this discussion because network setup/
routing/connectivity issues take a sharp divergence when you depart the real
internet and enter the amateur radio based ip networking arena. This divergence
in characteristics is simply attributable to the approximate 100 to 1 host-to-host
response time difference between the two which, in turn, leads to the failure,
in a radio environment, of most of the dynamic routing tools that we take for
granted on the hardwired side of the internet.

Let me see if I can illustrate the point by listing a few of the special characteristics
of radio based networks and some of the "real world' problems which we have
encountered in our local ip network:

1. Radio path networks tend to be a mix of 1200 and 9600 bps, half-duplex
links with quite long tx to rx turn around time (due to the combination of txdelay
and the effects of proper p-persist implementation). Host-to-host ping times
for a typical path (user -> node -> backbone -> node -> user) typically run
a few to several seconds.   This is for generally well managed networks with
few hidden transmitter problems and low activity.   When the hidden transmitters
fire up and collision rates climb, response time esculates to tens of seconds
and pings (dependent on UDP) rapidly start to fail. (Remember the exponental
retry timers of early NOS?!!!)

2. Where real internet depends almost entirely on domain name server queries
to central dns nodes, regular dependence on dns on radio paths is generally
impractical due to response time problems. I maintain an active dns at our
local server and instruct local users to enter a temporary 'addserver' whenever
they encounter an unresolved host name. Thus, they can update their local
domain.txt file when a new user comes on line but avoid the delays inherent
in the dns implementation of nos for normal operating.

3. We hand code routing and arp tables at the local ip nodes. Subnet
notation ([xx.xx.xx.xx]/nn) helps but cannot be relied upon because --

a) people move - trying to maintain every domain.txt file around the state
is far more trouble than adjusting the local routing tables, and,

b) radio paths change - nodes come and go, node owners qsy, operating
modes dictate different routes (e.g., when we go into RACES mode, some
of our nodes qsy to favor the area of emergency and other services such
as DX Cluster nodes become available). Fixed subnetting via ipaddress
assignment simply cannot deal with this.

4. The dynamic routing capabilities of netrom (and the like facilities of J(etc)NOS
fail worst at the type of greatest need, i.e., under the rapidly changing conditions
described above. And, ipaddr based subnetting is a complete disaster under
these conditions. Nor, have I even mentioned the effect of changing propagation
on this whole mess.

The point of these examples, John, is to reinforce the idea that these "real world"
problems render any attempt to strictly define a network based on physical
characteristics an exercise in frustation. I suggest that you leave the definition
of "network" alone, i.e., let it assume as much or as little as it tends to do by the
current de facto standards in context. Instead, I suggest that you focus on
some of the characteristics and problems of local classes of (particularily,
radio) networks and make specific suggestions for their setup and management
under different conditions.

Incidently, I think it would also be a good idea to address some the higher
level "networking" protocols such as the smtp mail exchange protocol,
(the domain.txt file 'mx' record facility) and/or alias file distribution. Locally,
we find the mx record tool quite useful.

-
>John Ackermann   AG9V
>Internet: jra@ag9v.ampr.org
>Packet: AG9V@N8ACV.#DAY.OH.USA

```
   -----------------
  Robert L. Smith             804/745-1065       bobsmith@i2020.net
  Smith Machine Works, Inc.                    wa4ypv@w4za.ampr.org
```

15. Re: [NETSIG:1957] Comet Antennas (was:Duplex 9600 digital)

From: wa1jhk@ix.netcom.com (Dave Maciorowski)
Date: Fri, 08 Sep 1995 11:53:10 -0600
To: netsig@tapr.org
Message-ID: <199509081755.KAA05609@ix4.ix.netcom.com>
Rendered body type: text/plain

On Fri, 8 Sep 1995 08:43:22, Doug Crompton wrote:
>I am moving a 220 voice repeater to my house. Although I have a 220
>ringo, in addition to the comet, I wanted to try the comet as it is
>the highest antenna on the tower. I quickly realized that the comet
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>pattern. After talking to a friend about this he to confirmed that his
>club had discontinued using a 440 comet in repeater service for the same
>reason.
>
>It is so bad that at 2-3 miles form the antenna you can find severe nulls
>when walking with a handheld. I then switched the repeater to the ringo
>and the condition improved greatly.
>
>I would like to have other input on this. Since we seldom realize things
>like this when running packet. It might explain why users find moving
>their antenna a short distance makes such a great difference.

     Our club is also discontinuing use of a Comet Repeater Antenna on
1.2Gig because of its poor radiation pattern.

     73,

          Dave

Dave Maciorowski, WA1JHK
Colorado Repeater Association, Inc.
  Serving the Colorado Front Range

Internet: wa1jhk@ix.netcom.com
AmprNet: wa1jhk@bbs.n0iak.ampr.org
AX.25:   wa1jhk@n0iak.#neco.co.usa.noam

16. Re: [NETSIG:1955] Re: Diodes

From: Chuck Hast <wchast@gateway.utilpart.com>
Date: Fri, 8 Sep 1995 15:16:14 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9509081558.C19135-0100000@gateway.utilpart.com>
Rendered body type: text/plain

Well you used to have a pretty extensive ROSE network in your state, but
there were some political problems and part of them went to TheNet again.

Depends on where you are, but if you are near the FL line anywhere from
Panama City west almost all of that network in Florida is ROSE, in fact
several of those swithces are PC-ROSE a port of ROSE to DOS, done by Dennis
wb6qkn in Panama City FL.

Once you get to FL you are in ROSE country again. There are some ROSE
switches in eastern GA. Have to look and see where though.

```
-------------------------------------------------------------------------------
   Chuck Hast                e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:Costa Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.


Running OS/2 WARP and LINUX on these boxes.

-------------------------------------------------------------------------------
Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
```

Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

17. Re: [NETSIG:1963] Re: Comet Antennas

From: MPFahmie@lbl.gov (Mike Fahmie)
Date: Fri, 08 Sep 1995 13:54:27 -0700
To: netsig@tapr.org
Message-ID: <199509082054.NAA06626@mh1.lbl.gov>
Rendered body type: text/plain

>On Fri, 8 Sep 1995 08:43:22, Doug Crompton wrote:
>>I quickly realized that the comet
>>had problems. It appears there are severe lobes at close range in the
>>pattern. After talking to a friend about this he to confirmed that his
>>club had discontinued using a 440 comet in repeater service for the same
>>reason.
>>
>>It is so bad that at 2-3 miles form the antenna you can find severe nulls
>>when walking with a handheld. I then switched the repeater to the ringo
>>and the condition improved greatly.
>>
Then on Sept 9th Dave Maciorowski said;

>   Our club is also discontinuing use of a Comet Repeater Antenna on
>1.2Gig because of its poor radiation pattern.
>

No one has mentioned the gain of the subject antennas, note that most vertical antennas with ground planes have a radiation pattern that centers the major lobe slightly ABOVE the horizon. As the gain/number of elements increase, so do the number of minor lobes and nulls above and below the major lobe. This is OK for the user, but not so good for the mountaintop node or voice repeater whose users are generally 10 degrees below the horizon. The horizon itself can be well below the perpendicular when the antenna is several thousand feet above average terrain.

Some manufactuers of commercial antennas allow the purchaser to specify a desired "downtilt" in the major lobe, at least one manufactuer has a screwdriver adjustment in the antenna base for this purpose! These antennas aren't cheap, but they pay off in the long run. I have seen several hams mount vertical antennas upside down to direct the major lobe toward their users, this works fine although waterproofing is a concern. Fibreglass antennas usually have some sort of air vent at the base and if inverted may collect water at the tip.

The purpose of this note is not to defend Comet (I have no connection with them, I don't even own one), but to point out that the "problems" encountered may not be unique to Comet, but simply a fact of life with vertical antennas on mountaintops.

73 Mike

 Mike Fahmie - WA6ZTY @ N6EEG - MPFahmie@lbl.gov
Advanced Light Source - Lawrence Berkeley Laboratory

18. Grid Square utility wanted

From: jthisdal@q.continuum.net (Jim Thisdale)
Date: Fri, 8 Sep 1995 22:46:32
To: netsig@tapr.org
Cc: jthisdal@q.continuum.net
Message-ID: <jthisdal.117.0016C71E@q.continuum.net>
Rendered body type: text/plain

>>I'm wishing that folks would follow the APRS convention and put the
>>6 digit Grid Square Identifier in the Info message.   That would make
>>it far easier to have a feel for where the node was at. Is there any
>>sort of APRS convention for noting the elevation of a system? Maybe
>>something like: [DN48ar3600] would work?
>>

>I suggest the ICAO flight altitude convention of noting in 100' increments
>above mean sea level. Thus, your example would become DN48ar36
>saving the extraneous zeros.

>For purposes of quick and dirty route studies, 100' foot increments would
>be fine.

Is there a PC program to convert lat / long to/from grid squares.

-Jim-

19. Re: [NETSIG:1965] Re: Comet Antennas

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sat, 9 Sep 1995 06:20:59 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950909061311.12995A-100000@acca>
Rendered body type: text/plain

I have mounted the 5 foot long Comet Dual Band antenna at 70 feet abouve the mountain that is 7500 feet above sea level and at my home in Las Cruces at 45 Feet above the valley floor.

Both antenna's work better than ANY antenna I have ever put up for any purpose. With the one at home I hit EVERY repeater in Las Cruces and El Paso TX on both 2 and 440 using my Alinco dj-580 transmitting at 100 milliwatts!

So don't believe the gain claimed by Comet, but it IS a good antenna. I have 3 in service and they just work. Being 5 feet long they don't blow off, or ice up too badly...

-karl

20. Re: [NETSIG:1966] Grid Square utility wanted

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sat, 9 Sep 1995 06:24:08 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950909062142.12995B-100000@acca>
Rendered body type: text/plain

Check into your local FBB packet radio bbs and use the built in grid square program. Put in the coordinates of anywhere in the world, get the Grid Square. Put in the Grid Square get the Coordinates....

-karl

On Sat, 9 Sep 1995, Jim Thisdale wrote:

> >>I'm wishing that folks would follow the APRS convention and put the
> >>6 digit Grid Square Identifier in the Info message. That would make
> >>it far easier to have a feel for where the node was at. Is there any
> >>sort of APRS convention for noting the elevation of a system? Maybe
> >>something like: [DN48ar3600] would work?
> >>
>
> >I suggest the ICAO flight altitude convention of noting in 100' increments
> >above mean sea level. Thus, your example would become DN48ar36
> >saving the extraneous zeros.
>
> >For purposes of quick and dirty route studies, 100' foot increments would
> >be fine.
>
> Is there a PC program to convert lat / long to/from grid squares.
> -Jim-
>
>

21. OTA Wireless Report Info

From: dewayne@warpspeed.com (Dewayne Hendricks)
Date: Tue, 12 Sep 1995 06:36:32 -0700
To: netsig@tapr.org (TAPR Networking List)
Message-ID: <v02130507ac7b3c38073e@[204.118.182.22]>
Rendered body type: text/plain

NETSIG Readers:

I am posting this for those of you who attended my PCS Workshop at the ARRL DCC and expressed interest in how to obtain the OTA report that I referred to during the workshop.

-- Dewayne

####################################

*
WIRELESS TECHNOLOGIES AND THE NATIONAL
INFORMATION INFRASTRUCTURE
*

The OTA report "Wireless Technologies and the National
Information Infrastructure" is now available. Ordering
information and details about electronic access are at
the end of this file.

*
WIRELESS TECHNOLOGIES POISED FOR RAPID GROWTH;
MANY UNCERTAINTIES REMAIN
*

Rapid technological change, uncertainty about what customers
really want and will pay for, and an outdated regulatory
structure in the process of being overhauled all contribute
to a dynamic, but chaotic, marketplace for wireless
services. Despite the "hype" surrounding new wireless
services, many of the systems that get the most attention--
personal communications services (PCS) and low-earth
orbiting satellites (LEOs), for example--are not yet
operational. They will have to overcome a number of
technical, regulatory, and economic obstacles before they
will play a significant role in the nation's evolving
National Information Infrastructure (NII), says the
congressional Office of Technology Assessment (OTA) in a
report released today.

OTA's report, requested by the House Science, Space, and
Technology Committee (now the Committee on Science) and
Representative Michael Oxley, notes that wireless
technologies and services have become one of the fastest
growing segments of the telecommunications industry. U.S.
cellular phone companies add 28,000 customers each day, and
in recent years have achieved annual growth rates that, in
some cases, surpass 40 percent. The Federal Communications
Commission (FCC) recently raised almost $10 billion for the
U.S. Treasury from auctions of radio frequencies that will
be used to deliver next-generation mobile telephone and data
services.

Driving the rush to wireless, OTA finds, is the rapid
development of new wireless technologies and services and
increasing customer demands for mobile and more flexible
communications systems. Mobility is one of the most
important drivers of wireless services, and OTA
conservatively estimates that nearly 50 million workers (44
percent of the workforce) are mobile in some way today and
the percentage of the workforce that can be classified as
mobile is increasing. OTA also expects wireless
technologies to play an important role in achieving the
evolving goals of universal service and to become important
competitors to traditional wire-based (telephone and cable
television) companies in the provision of next-generation
telephone, data communication, and video services.

Despite their promise, however, OTA identifies several
barriers and concerns that are likely to slow the deployment
of wireless services. The capabilities of many wireless
systems are still limited, for example, and standards that
will allow different wireless systems to work together as
well as with many wireline systems still must be developed--
a process that will last many years, says OTA. Public
opposition to wireless transmission towers is also slowing
deployment, and Congress will likely have to intervene to
resolve conflicts between local rules and federal mandates.

OTA finds that concerns about the possible health effects of
wireless systems have become a particularly volatile issue.
Research to date has not proven any adverse health effects
from wireless communication systems, says OTA, but some
researchers have found that radio waves do lead to
biological changes in cells. Studies that may shed light on
this controversy have only just begun, and OTA expects the
issue to remain contentious for many years. Beyond current
regulatory reform efforts, OTA concludes, little direct
government support is needed for wireless technologies to

develop into an effective part of the NII. Government
attention to spectrum allocations is critical for the
development of future services, and a continuing commitment
to integrating wireless and wireline policymaking must be
maintained.

OTA believes that the long-term outcomes of present policies
and technology developments have not been adequately
considered. Government funding of wireless technology
development is generally not needed, but some potential
users--education and underserved populations, for example--
may need assistance to realize the benefits that wireless
offers. Policies designed to support universal service
goals will have to be carefully crafted so as not to
disadvantage wireless systems, says OTA.

OTA is a nonpartisan analytical agency that serves the U.S.
Congress. Its purpose is to aid Congress with the complex
and often highly technical issues that increasingly affect
our society.

*
ORDERING INFORMATION
*

For copies of the 300-page report for congressional use,
please call (202) 224-9241. To order copies for
noncongressional use, indicate stock number 052-003-01421-1
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or MasterCard number and expiration date to Superintendent
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[FAX (202) 512-2250] or call (202) 512-0132
(GPO's main bookstore). Federal Express service is
available for an additional $8.50 per order. A free
8-page summary is available by calling (202) 224-8996.

*
ELECTRONIC ACCESS
*

Readers can access this report electronically through OTA
Online via the following standard Internet tools:

WWW: http://www.ota.gov

FTP: otabbs.ota.gov; login as anonymous, password is your
e-mail address; publications are in the /pub directory

Telnet: otabbs.ota.gov; login as public, password is public

Additional features of OTA Online are available through
client software with a graphical user interface for
Microsoft Windows. This software is available free through
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228-6000, or email sysop@ota.gov Direct questions or
comments on Internet services by email to netsupport@ota.gov

Dewayne Hendricks, WA8DZP ! CIS: 75210,10   AppleLink: D6547
Warp Speed Imagineering   ! Internet: dewayne@warpspeed.com
43730 Vista Del Mar   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
Fremont, CA 94539-3204   ! AOL: HENDRICKS
Fax: (510) 770-9854   ! WWW: http://www.warpspeed.com/
----

22. Mac BBS/Terminal s/w

From: Eric Rosenberg <ericr@lan.vita.org>
Date: Mon, 11 Sep 1995 12:34:00 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9509111251.A18111-0100000@lan.vita.org>
Rendered body type: text/plain

I'm not certain if this is the place to ask, but we (VITA) are looking for
Mac BBS and terminal software for a proposed HF network in Africa.

We are (I am) familiar with lots of DOS-based packages, but the Mac world
is alien to me.

Can anyone help?

Please email directly and I can summarize if need be.

Thanks

Eric WD3Q
--
Eric Rosenberg
Volunteers In Technical Assistance voice: +1-703-276-1800
1600 Wilson Blvd., Suite 500 fax: +1-703-243-1865
Arlington, VA 22209 USA ericr@vita.org
VITA's Home Page = http://www.vita.org

23. Re: [NETSIG:1954] Re: Diodes or Better.

From: "Tom Moulton" <tmoulton@ram.net>
Date: Mon, 11 Sep 95 09:01:01 EDT
To: netsig@tapr.org
Message-ID: <15021573.1e0a@ram.net>
Rendered body type: text/plain

>Do you know of a site where I can find the ROSE spec? I am working on a
>system (in spare time -- it's in very early stages) of a backbone system
>that can except ROSE-type functions (I like that users need not know all the
>
>hops, only the destination). I am hoping to get a few Mb/s over 10 gigs
>using a token passing protocol that I almost have working now. Only a few
>pesky bugs left in that part! Hopefully I can get the system to pass TCP/IP
>and *route* it, and allow ROSE connects for BBS links. The backbone protocol
>
>is a propreitary token passing protocol that eliminates the possibility of
>collisions so that 100% bandwidth is avaible to the network (i.e. no
>collision pauses).
>
>   -Bill kb8wyp

Bill,

Basically ROSE is ISO 8208 (X.25 Packet Layer) on top of AX.25 using PID 01

The offical ISO 8208 spec can be found at ftp/gopher itu.org

I also can answer any questions..

There are also many books on X.25 and there was a paper in the ARRL CNC
by Terry Fox, WB4JFI that included the X.25 spec.

tom

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

24. Re: [NETSIG:1855] Re: Diodes or better...

From: jthisdal@q.continuum.net (Jim Thisdale)
Date: Tue, 12 Sep 1995 21:22:10
To: netsig@tapr.org
Cc: jthisdal@q.continuum.net
Message-ID: <jthisdal.125.00155F1A@q.continuum.net>
Rendered body type: text/plain

> Hi,
> The diodes between NETROM TNC s works ok, but it does represent significant
> Delay. If u are running two 9600 baud NETROM s, in a stack of three or
> more TNC s, the delay can respresent as much, and many times more delay
> Tthan the radio path.

>   Additionally, when running 3 or more tncs in a stack, the action of the
> automatic router, will cause looping routes. When a path dies out on the RF side, the router
> will end up causing the route to go each of the nodes in a stack of three
> or more. If the RS-232 qaulity is not less than 255, these routes will
> never die away, and will be permanent. Ur stack will tell the world, from then on, that it has a path
> to nodes that may not be on the air anylonger. The common solution to this is
> set the RS-232 quality to 254. This works, but it makes the decay
> of paths interminably long.

>   To solve this problem, I "star" the routing within a node stack.   Using defined neigbor/Locked
ROUTES technigues on the RS-

>232 path, routing
> is set up so that no loops can occure with a node stack. The penalty for this
> is that nodes that have faulty back up memory, or fail often cause the
> operator to have to redo the "star" programming. If ur facility is not reliable, u may want
>   to avoid the "star" technigue.

>   Of course, the real way around this problem, is a single processor node,
>   such as a PacketTEN.

> 73, Don. wb9mjn.

Hello Don, I've got one question here, this diode thing, can you describe it,
is there some docs on it, or is it commercial, etc.
I've yet to find any local hams that can tell me about it, and no docs either.
-Jim- N1JMM@n1okk.ct.usa.na or jthisdal@q.continuum.net

25. Radios for 9600 baud repeater use

From: Steve Stroh <strohs@halcyon.com>
Date: Tue, 12 Sep 1995 23:30:05 -0700 (PDT)
To: TAPR Networking SIG List <netsig@tapr.org>
Message-ID: <Pine.ULT.3.91.950912232300.20602A-100000@chinook.halcyon.com>
Rendered body type: text/plain

I would like to hear about radios that NetSIG'ers have found particularly
appropriate for use as 9600 baud repeaters. I'm particularly interested
in hearing about "I just can't believe how well this works" experiences
rather than "...It does work, but..." (we're having our share of THOSE at
the moment, which prompts this query.

My particular interest is in UHF models at about 50 to 75 watts power, and
modified for use as a repeater with a 90%+ duty cycle. The power level
would be throttled back to a conservative 25-30 watts. Modems are the
TAPR modem with bit regen circuit.

To start off, I've heard NOTHING negative, ever, about Motorola Mitreks.
I've heard that they're inexpensive, reliable, stable, easy to modify,
and easy to obtain. True? We just don't have any experience with them
here in the Pacific Northwest- we've been using GE's and Tekks, mostly.

Replies to NetSIG, please! I'm sure this is a subject of near-universal
interest.

Steve N8GNJ

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

26. Dallas DCC -- and a new toy

From: jra@ag9v.ampr.org
Date: Wed, 13 Sep 1995 09:25:36 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199509131325.JAA30142@ag9v.ampr.org>
Rendered body type: text/plain

The ARRL Digital Communications Conference in Dallas was a blast! About 130
attendees, and some great presentations -- particularly Phil Karn's after-
dinner speech and Dewayne Hendricks' Sunday symposium on the commercial
wireless networking situation and its likely impact on ham radio.

One thing I was particularly interested in, though, was the paper and demo
of FlexNet, the German networking protocol. It's been around for a long time,
but ran on custom hardware not available in the states. It's now been ported
to the PC, and looks really slick.

It acts like a data pipe, and user access is via the digi model used by ROSE
(although there is a user interface available as well). The network overhead
is very low, and the network is fully adaptive -- it sets things like maxframe,
frack, ppersist, and slottime dynamically based on network performance.

Saturday evening, Bdale N3EUA and I had a two node system running between
our laptops (using a null modem, no radios) and had a blast playing with it.

I'm very impressed, and hope to set up an experimental network here in Dayton
this fall to play with it. At the moment, I only see a few downsides:

1) integration with NetROM is not seemless, though it's possible (netroms
can treat the Flexnet network as a pair of digis and hard route across them,
but I don't think node broadcasts will traverse the network);

2) the maxframe size is in the 280 byte range, and larger packets are simply
dropped on the floor, so IP networks will have to handle fragmentation issues
themselves (from talking with the developer, it may be possible to remove
this limitation in a future release);

3) source code isn't available (though the package looks very stable, and
there is a driver developer's kit available); and

4) it's presently a PC-only solution -- there's no support for running it
in a TNC.

Once I get a network running to play with (probably not till later in the
year, when I have a hamshack again), I'll post more impressions. In the
meantime, I'd be very interested in hearing from others who are playing
with FlexNet.

73,

John

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

27. Re: [NETSIG:1974] Dallas DCC -- and a new toy

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Wed, 13 Sep 95 10:24:09 UTC
To: netsig@tapr.org
Message-ID: <5570@paccomm.com>
Rendered body type: text/plain

I had some discussions with the author and he appears willing to port the
code to the TNC-2 and probably the 68302 (which is available in Germany
and is the processor in the PackeTen and forthcoming PackeTen dual port
unit).

Re: Flexnet and John Ackerman's recent posting.
_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

28. Re: [NETSIG:1972] Re: Diodes or better...

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Wed, 13 Sep 1995 10:58:31 -0500
To: netsig@tapr.org
Message-ID: <199509131558.KAA20546@sys1.tapr.org>
Rendered body type: text/plain

At 01:34 AM 9/13/95 -0500, Jim Thisdale wrote:

SNIP

>Hello Don, I've got one question here, this diode thing, can you describe it,
>is there some docs on it, or is it commercial, etc.
>I've yet to find any local hams that can tell me about it, and no docs either.
>-Jim- N1JMM@n1okk.ct.usa.na or jthisdal@q.continuum.net

Jim, there's diode matrix docs as well as a 4-port diagram (plus a whole lot
of other thenet info) available via anonymous ftp at: hereford.ampr.org
/pub/hamradio/thenet/tn212.exe

73 de Jack

29. TheNet X1J and JNOS BBS

From: Waldemar Ogonowski <sp2ong@geofizyka.torun.pl>
Date: Wed, 13 Sep 1995 17:48:58 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <199509131749.RAA00542@pc1.geofizyka.torun.pl>
Rendered body type: text/plain

Hello

I have one problem with TheNet X1J

```
             1200 bd                        KISS LINK
| TheNet |_____________________|TheNet X1J |_____________| IBM PC         |
| sp2abc |   144.625 Mhz     | SP2XYZ    |  RS-232     | JNOS BBS SP2CCC|
```

I can connect from Node sp2abc to Node SP2XYZ or to BBS JNOS SP2CCC.
Now I conncet from SP2abc to SP2XYZ but I can not connect with SP2XYZ
to JNOS BBS SP2CCC and I can connect from JNOS BBS SP2CCC to Node SP2ABC
but I can not connect from JNOS BBS with Node SP2XYZ.

How to setup TheNet X1J SP2XYZ for possibility connect SP2XYZ <-> JNOS BBS.


```
  VY & 73 Waldek (ex SP8ONG)
-------------------------------------------------------------------------
E-mail: sp2ong@geofizyka.torun.pl  sp2ong@torun.ampr.org  SP2ONG@SR2BOX
htpp://www.torun.ampr.org/sp2ong   --==>> * <<==--    Qth: Torun JO93IA
-------------------------------------------------------------------------
```


30. Re: [NETSIG:1976] Re: Diodes or better...

From: jthisdal@q.continuum.net (Jim Thisdale)
Date: Thu, 14 Sep 1995 00:54:43
To: netsig@tapr.org
Cc: jthisdal@q.continuum.net
Message-ID: <jthisdal.128.0000E96D@q.continuum.net>
Rendered body type: text/plain

>Jim, there's diode matrix docs as well as a 4-port diagram (plus a whole lot
>of other thenet info) available via anonymous ftp at: hereford.ampr.org
>/pub/hamradio/thenet/tn212.exe

>73 de Jack

Thanks Jack, I'll try to grab those doc's.
-Jim-

31. [NETSIG:1977] TheNet X1J and JNOS BBS

From: "Stephen D. Goff" <102413.410@compuserve.com>
Date: 14 Sep 95 07:33:04 EDT
To: Waldemar Ogonowski <sp2ong@geofizyka.torun.pl>
Cc: TAPR NETSIG <netsig@tapr.org>
Message-ID: <950914113304_102413.410_BHA78-1@CompuServe.COM>
Rendered body type: text/plain

I run a JNOS BBS with 3 X1J's on a diode matrix thru one serial port to the
computer; post a list of the parms and modes so we can see where the problem may
be...

A typical list on mine is:

```
parm
YORKSW:N8IVX-1}  30 140 150 230 6 4 1800 12 240 4 3 180 4 4 900 192 5 6 7
10 100 18000 0 1 0 0
mode
YORKSW:N8IVX-1}  0 0 6 3 1 55 0 1800 2 1800 1 31 0 0 0 0 0
```

73 de Steve

32. DCC Presentations summary?

From: Steve Stroh <strohs@halcyon.com>
Date: Thu, 14 Sep 1995 05:51:46 -0700 (PDT)
To: TAPR Networking SIG List <netsig@tapr.org>
Message-ID: <Pine.ULT.3.91.950914055001.29265A-100000@chinook.halcyon.com>
Rendered body type: text/plain

Anyone attending DCC '95 this last weekend care to post a quick summary?

I'm particularly curious about what the presentation was all about with
the catchy title of "200 additional channels for packet on 2m" or
something like that.

Thanks,

Steve N8GNJ

--

Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

33. Re: Radios for 9600 baud repeater use

From: wa1jhk@ix.netcom.com (Dave Maciorowski)
Date: Thu, 14 Sep 1995 10:47:55 -0600
To: netsig@tapr.org
Message-ID: <199509141650.JAA16107@ix4.ix.netcom.com>
Rendered body type: text/plain

At 01:37 AM 9/13/95 -0500, Steve Stroh wrote:
>
>I would like to hear about radios that NetSIG'ers have found particularly
>appropriate for use as 9600 baud repeaters. I'm particularly interested
>in hearing about "I just can't believe how well this works" experiences
>rather than "...It does work, but..." (we're having our share of THOSE at
>the moment, which prompts this query.
>
>My particular interest is in UHF models at about 50 to 75 watts power, and
>modified for use as a repeater with a 90%+ duty cycle. The power level
>would be throttled back to a conservative 25-30 watts. Modems are the
>TAPR modem with bit regen circuit.
>
>To start off, I've heard NOTHING negative, ever, about Motorola Mitreks.
>I've heard that they're inexpensive, reliable, stable, easy to modify,
>and easy to obtain. True? We just don't have any experience with them
>here in the Pacific Northwest- we've been using GE's and Tekks, mostly.
>
>Replies to NetSIG, please! I'm sure this is a subject of near-universal
>interest.
>
>Steve N8GNJ

Hi Steve,

     This response falls in your "I just can't believe how well this works"
category :-)

     We have had a 9600 baud digital repeater on-the-air since last fall on
447.200 in the Denver area (Conifer Mtn, 35 miles west-southwest of Denver
at 10,000 feet). In the last 100 days, we have transmitted more than 2.25
million packets thru the repeater with excellent error statistics. The
447.200 repeater is currently part of the 44.20 backbone for northeast
Colorado. An Internet/AMPRnet gateway and firewall operated by Ted, N0IAK,
gives hams secure access to the Internet. The Internet gateway also
connects the local Netrom network to other parts of the world.

     The repeater is constructed from a Motorola Micor modified for
full-duplex and 9600 baud digital operation, an MFJ 1270B TNC used as an
identifier, and a TAPR 9600 baud modem with the bit-regenerator installed.
Other site equipment provides the FCC-required remote transmitter control.
We do not currently have network routing equipment installed at the repeater
site.

     I have tuned and modified MANY Micors at this point of the 25-, 45-,
and 75-watt variety. Few of the 75-watt radios seem to generate proper
output power at ham frequencies. All of the 25- and 45-watt radios are
working with excellent results.

     The repeater is currently based on a 25-watt Micor running at 15-watts
-- for higher power radios, I would run them at 50% of their rating or less
with a fan on the heat sink. There have been no problems with the repeater
since being installed a year ago.

     The mods I have used are based on the Dan Meredith mods for Micors,
however I have made some changes that reduce the work, improve decoding, and
make it easier to work on the radios. After tuning, all 9600 baud mods can
be installed in 30 minutes. It takes another hour to install the
full-duplex mods for repeater operation. After mods, the modulation eye is
quite acceptable proven by the excellent performance we have experienced.

     Our repeater was the second to be installed in Colorado -- the first
was the 447.250 on Pike's Peak serving 44.32 and is based on a Motorola
Mitrek. Bdale, N3EUA, reports excellent performance from the repeater and
all other installations of the Mitrek in use in the Colorado Springs area.

     I would be happy to provide any additional information on Micor
modifications
that anyone requires...

73,

Dave

Dave Maciorowski, WA1JHK
Colorado Repeater Association, Inc.
  Serving the Colorado Front Range

Internet: wa1jhk@ix.netcom.com
AmprNet: wa1jhk@bbs.n0iak.ampr.org
AX.25:   wa1jhk@n0iak.#neco.co.usa.noam

34. Re: [NETSIG:1981] Re: Radios for 9600 baud repeater use

From: jra@ag9v.ampr.org
Date: Fri, 15 Sep 1995 07:39:59 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <199509151140.HAA04344@ag9v.ampr.org>
Rendered body type: text/plain

You (Dave Maciorowski) write:

>   I have tuned and modified MANY Micors at this point of the 25-, 45-,
>and 75-watt variety. Few of the 75-watt radios seem to generate proper
>output power at ham frequencies. All of the 25- and 45-watt radios are
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>   The repeater is currently based on a 25-watt Micor running at 15-watts
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>with a fan on the heat sink. There have been no problems with the repeater
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>
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>however I have made some changes that reduce the work, improve decoding, and
>make it easier to work on the radios. After tuning, all 9600 baud mods can
>be installed in 30 minutes. It takes another hour to install the
>full-duplex mods for repeater operation. After mods, the modulation eye is
>quite acceptable proven by the excellent performance we have experienced.

I don't have first-hand experience with this problem but I'm <told> that
the UHF Micors shouldn't be run at <less> than 50% of rated power, as the
efficiency goes to hell and the increased dissapation may actually cause
earlier device failure. The Micor has one of the earlier UHF transistor
finals, and it's very inefficient to begin with; the things draw a lot more
amps on transmit than you might expect.

Also, the final transistors for the UHF Micor are no longer available, so
keep a spare radio handy!

On the other hand, we've been using a 45 watt unit in a voice repeater with
the power set to about 30 watts and have had very good reliability. Once
when the controller flaked out we had several hours of 100% duty cycle.
With a couple of fans blowing across the final the case didn't get <too>
hot, and the thing seemed to survive OK.
--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

35. Interop ?

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 15 Sep 1995 10:32:12 -0500 (CDT)
To: netsig@tapr.org (NETSIG mailing)
Message-ID: <199509151532.KAA26572@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Does anyone have the dates for Interop 96 ?

I have some old 94 sites on WWW concering interop, but no current contact
information. If you have a contact location, please let me know.

Greg

36. Re: [NETSIG:1982] Re: Radios for 9600 baud repeater use

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 15 Sep 1995 09:49:21 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.950915094447.22595A-100000@acca>
Rendered body type: text/plain

On Fri, 15 Sep 1995 jra@ag9v.ampr.org wrote:

> You (Dave Maciorowski) write:
>
> >   I have tuned and modified MANY Micors at this point of the 25-, 45-,
> >and 75-watt variety. Few of the 75-watt radios seem to generate proper
> >output power at ham frequencies. All of the 25- and 45-watt radios are
> >working with excellent results.
> >
> >   The repeater is currently based on a 25-watt Micor running at 15-watts
> >-- for higher power radios, I would run them at 50% of their rating or less
> >with a fan on the heat sink. There have been no problems with the repeater
> >since being installed a year ago.
> >
> >   The mods I have used are based on the Dan Meredith mods for Micors,
> >however I have made some changes that reduce the work, improve decoding, and
> >make it easier to work on the radios. After tuning, all 9600 baud mods can
> >be installed in 30 minutes. It takes another hour to install the
> >full-duplex mods for repeater operation. After mods, the modulation eye is
> >quite acceptable proven by the excellent performance we have experienced.
>
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> the UHF Micors shouldn't be run at <less> than 50% of rated power, as the
> efficiency goes to hell and the increased dissapation may actually cause
> earlier device failure. The Micor has one of the earlier UHF transistor
> finals, and it's very inefficient to begin with; the things draw a lot more
> amps on transmit than you might expect.
>
> Also, the final transistors for the UHF Micor are no longer available, so
> keep a spare radio handy!
>
> On the other hand, we've been using a 45 watt unit in a voice repeater with
> the power set to about 30 watts and have had very good reliability. Once
> when the controller flaked out we had several hours of 100% duty cycle.
> With a couple of fans blowing across the final the case didn't get <too>
> hot, and the thing seemed to survive OK.
> --
> John Ackermann   AG9V
> Internet: jra@ag9v.ampr.org
> Packet: AG9V@N8ACV.#DAY.OH.USA
>

        Guys I am using a TEKK 2 watt radio at 9600 baud over a 45 mile
path from the valley floor to a mountain at 7500 feet (valley is 4500
feet)...:). Anyway for point-to-point 9600 baud paths you should not need
the 45 watts from the Micor. Most voice networking here in NM uses UHF
Micor's running on the driver putting out about 5-10 watts. They run cool
and last for years...

 ****
 * 73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu   *
 *   *
 * The only pbbs in Las Cruces, NM   Telephone bbs 1:305/111 Fidonet   *
 *   Using the F6FBB ver 5.15C   Binkley mailer with Maximus 2.12   *
 *   *
 *   Electrical Engineer with the Army Research Laboratory   *
 *   *
 ****

37. Re: Interop ?

From: jra1854@tntech.edu (Jeffrey Austen)
Date: Fri, 15 Sep 1995 11:23:30 -0600
To: netsig@tapr.org
Message-ID: <v01530503ac7f6502c676@[149.149.42.11]>
Rendered body type: text/plain

>Does anyone have the dates for Interop 96 ?

>From http://www.sbexpos.com

  1996 NetWorld+Interop

```
  Las Vegas       Conference:  April 1-5          Exposition:  April 2-4
  Frankfurt       Conference:  June 10-14         Exposition:  June 12-14

Jeff, k9ja

---
Jeffrey Austen       |  Tennessee Technological University
jra1854@tntech.edu   |  Box 5004
+1 615 372 3485      |  Cookeville Tennessee 38505   U.S.A.
```

38. RE: [NETSIG:1966] Grid Square utility wanted

```
From: "Beaudry, Tom" <Tom_Beaudry@tvratings.com>
Date: Fri, 15 Sep 95 15:54:00 PDT
To: netsig <netsig@tapr.org>
Message-ID: <305A03AA@mailgate.dun.nielsen.com>
Rendered body type: text/plain

Try the following URL:

http://uhavax.hartford.edu/disk$userdata/faculty/newsvhf/www/vhf-soft.html


Thomas M. Beaudry  K8LA / YS1ZTM
Tom_Beaudry@tvratings.com

This has been a figment of your imagination and
certainly does not represent my employer in any manner.

 ----------
From:  netsig[SMTP:netsig@tapr.org]
Sent:  Saturday, September 09, 1995 1:23 AM
To:  netsig
Subject:  [NETSIG:1966] Grid Square utility wanted

Is there a PC program to convert lat / long to/from grid squares.
 -Jim-
```

39. Re: [NETSIG:1984] Re: Radios for 9600 baud repeater use

```
From: rdonnell@eskimo.com (Robert Donnell)
Date: Fri, 15 Sep 1995 18:55:26 -0700
To: netsig@tapr.org
Message-ID: <199509160152.SAA27561@mail.eskimo.com>
Rendered body type: text/plain

>       Guys I am using a TEKK 2 watt radio at 9600 baud over a 45 mile
>path from the valley floor to a mountain at 7500 feet (valley is 4500
>feet)...:). Anyway for point-to-point 9600 baud paths you should not need
>the 45 watts from the Micor. Most voice networking here in NM uses UHF
>Micor's running on the driver putting out about 5-10 watts. They run cool
>and last for years...
>
>
>
>
> ********************************************************************************
> *  73, de karl k5di@k5di.nm.usa.na   k5di.ampr.org   k5di@acca.nmsu.edu    *
> *                                                                              *
> *  The only pbbs in Las Cruces, NM     Telephone bbs 1:305/111 Fidonet     *
> *    Using the F6FBB ver 5.15C         Binkley mailer with Maximus 2.12    *
> *                                                                              *
> *        Electrical Engineer with the Army Research Laboratory             *
> *                                                                              *
> ********************************************************************************
>
>
>
>
>
>
>
>

Karl,

In this neck of the woods, we're putting up 9600 baud full-duplex repeaters
to provide user access (for those guys that are running TEKK's and the
like).  Except for the single high-level 2-meter system, all others are at
less than 1000 feet of elevation, and definitly not in the catagory of a
line-of-site situation for most users.  As a result, they also suffer the
```

disadvantage of needing to use omnidirectional antennas. As it happens, all
of these machines are on cellular sites, using the existing towers. This
means that for our coverage to exceed that of the cell site, we have to
increase ERP and receiver performance. Another factor in using these sites
is that we hope eventually (as the need arises) to re-use the same repeater
pairs for additional 9600 baud packet repeaters. So having sites that are
not "all-seeing" is considered a plus. Of course, one advantage of the
repeater concept is that all users are able to work all other users
'direct'. It also means that all users can use a beam to improve
reliability and reduce multipath - they have a common point to aim for.

So - that's why we're interested higher power capabilities than provided by
TEKK and some of the 'dash-mount' catagory radios. The TEKK radios are
great at what they do, but repeater-grade RF gear they're not.

73, Bob

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
----

40. Re: [NETSIG:1973] Radios for 9600 baud repeater use

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sun, 17 Sep 1995 20:00:40 -0500
To: netsig@tapr.org
Message-ID: <199509180100.UAA03156@sys1.tapr.org>
Rendered body type: text/plain

>
>I would like to hear about radios that NetSIG'ers have found particularly
>appropriate for use as 9600 baud repeaters. I'm particularly interested
>in hearing about "I just can't believe how well this works" experiences
>rather than "...It does work, but..." (we're having our share of THOSE at
>the moment, which prompts this query.
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>My particular interest is in UHF models at about 50 to 75 watts power, and
>modified for use as a repeater with a 90%+ duty cycle. The power level
>would be throttled back to a conservative 25-30 watts. Modems are the
>TAPR modem with bit regen circuit.
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>To start off, I've heard NOTHING negative, ever, about Motorola Mitreks.
>I've heard that they're inexpensive, reliable, stable, easy to modify,
>and easy to obtain. True? We just don't have any experience with them
>here in the Pacific Northwest- we've been using GE's and Tekks, mostly.
>
>Replies to NetSIG, please! I'm sure this is a subject of near-universal
>interest.
>
>Steve N8GNJ
>
>--
>Steve Stroh N8GNJ   strohs@halcyon.com
>Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org
>
I converted a low uhf mitrek for full-duplex packet repeater operation.
While it can be done, the effort of reducing the off-frequency transmit spur
level is time consuming.

With the mitrek, the transmit and receive units are on a single board. The
output from the receiver injection chain is high enough to cause mixing with
the transmitter injection chain. The output spur depends upon the mixing
products. In my case it was close to the receiver input and as I recall, at
a rather high level.

The local VHF/UHF remote base linking types were able to reduce the spurs on
their systems by just adding bonding to the Mitrek bottom plate, and then
let the out of band spur be reduced by the duplexer filter. Suspect the
spur level would still be high enough to cause potential site interference
though.

I used a sensitive spectrum analyser and through a combination of bonding,
was able to bring the transmitter spur down into the noise level and thus
not cause self-desense.

Bottom line: Easy approach for mitrek repeater operation is to use two
units, one for receive and one for transmit. Also recommend the channel
elements be crystalled up and adjusted by the xtal company.

If anyone is interested, I have a low uhf 30 watt mitrek crystalled up in

the 423 - 428 range, with the tapr/k0pfx mods for 9k6 AND the 25 khz
digi-key 10.7 MHz filters installed, for $165 shipped ups, lower 48. This
is NOT a repeater and doesn't include manual or power plug. It does include
a built-in home brew panel with speaker, volume, squelch and PTT controls.
If needed, I can provide a partial copy of the manual, including the mods,
for an extra $5.

I understand the power plugs from the older Motorola Motracs and Mocoms are
OK with the Mitrek. Before folks start squawking about $50 mitreks being
available, let me suggest this price is for the high uhf units, not the low
range ones!

73 de Jack

41. Re: [NETSIG:1988] Re: Radios for 9600 baud repeater use

From: ve6eei@ve6eei.ampr.ab.ca (Evan E. Idler, Edmonton, AB [192.75.200.5])
Date: Sun, 17 Sep 95 22:35:08 mst
To: netsig@tapr.org
Message-ID: <33403@ve6eei.ampr.ab.ca>
Rendered body type: text/plain

===== Begin of included message =====

> >I would like to hear about radios that NetSIG'ers have found particularly
> >appropriate for use as 9600 baud repeaters. I'm particularly interested
> >in hearing about "I just can't believe how well this works" experiences
> >rather than "...It does work, but..." (we're having our share of THOSE at
> >the moment, which prompts this query.
>
  ===== End of included message =====

For my first 9600 baud repeater, I went the easy route, a pair of
Kantronics D4-10 radios, and a TAPR Modem with the bit regen option
and clock option. It took about an hour to wire up the repeater, and
I had it on the air. The repeater ran for almost 2 years without a
problem, before getting hit by lightning. But it only took about 6
hours and $75 in parts to fix it. Still running without a problem
since then. I run TCP/IP thru it with 512 Byte packets, and a 2K
window, so I get about 650 cps thru it without a problem.

I have noticed that not many people seem to want the higher speed. It
has taken almost 3 years to get 10 users on the repeater. With the cheep
TEKK radio working so easily with Kantronics KPC-9612, I can figure it
out. The last guy who got up on our repeater told me it took him only
30 Minutes to wire the radio to the tnc, and 5 minutes to get his deviation
set to a point where it worked reliable (without a meter, he just adjusted
it slowly upward until his pings started comming back from my station).
So, it isn't hard to get things running for the users, it you get a
digital repeater up and running.

  ===== Begin of included message =====
>
> I converted a low uhf mitrek for full-duplex packet repeater operation.
> While it can be done, the effort of reducing the off-frequency transmit spur
> level is time consuming.
>
> If needed, I can provide a partial copy of the manual, including the mods,
> for an extra $5.
>
> 73 de Jack
>
>
  ===== End of included message =====

Could you e-mail me the mods for the Full Duplex on the Mitrek. I'm
about to do 5 of them for 9600 full duplex operation, for linking,
and repeaters. I have the manuals, I just don't know what should be done
for the full duplex mods. I can figure it out myself, but why re-invent
the wheel.

73
Evan

==========

```
Evan E. Idler                     |         Of All The Things I've Lost
ve6eei@ve6eei.ampr.ab.ca          |         In Life, I Miss My MIND The
Edmonton, Alberta, Canada         |         Most!!!
Amateur Packet Radio Station VE6EEI [192.75.200.5]
=========================================================================
```

42. Re: [NETSIG:1989] Re: Radios for 9600 baud repeater use

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 18 Sep 1995 13:03:31 -0500
To: netsig@tapr.org
Message-ID: <199509181803.NAA22445@sys1.tapr.org>
Rendered body type: text/plain

The K0PFX mitrek mods for 9k6 don't include full-duplex operation, but rather go into setting the unit up with the wide-band IF filters and interfacing. These mods include pictorial information of which I don't have emailable graphics files. Perhaps this material is available on the tapr server, since he is on the tapr BoD.

Full-duplex mods consist of cutting one or two diodes plus a strap or two, the information of which, my shack has temporarily eaten. This information should be available at a number of ftp sites. Perhaps someone here will share the file.

As far as getting rid of the transmitter spurs (if present), thiswas a trial and error process which involved the use of a sensitive spectrum analyzer with a 'sniffer loop'.

In my particular case, I used mini-hardline runs from the transmitter output and to the receiver input. I added an N fitting on the left wall at about the only space available. This was a special fitting that converted from N to SMA, which in turn attached to the mini-hardline. The original antenna relay and coax and UHF fitting was removed, replaced with an N bulkhead barrel. On the rear of the N fitting was an N to SMA adaptor which connected to the remaining mini-hardline.

My reasoning for using the hard line was to reduce as much as possible, leakage between transmitter and receiver. The receiver input and the transmitter output are physically close together.

Spur reduction took the form of using silver braid from RG-214 and force fitting a bond between various transformer cans and the inside walls of the enclosure. In my case it was also necessary to use a VERY large iron and solder a bond across three of the transformers. The mitrek bottom plate is covered in some sort of insulating (or perhaps shielding) material. A two inch slot was cut through this material and again, silver braid from RG-214 was spot soldered to the bottom plate and formed to bunch-force contact the internal chassis assembly with the plate installed.

Others operating these sets full-duplex in repeater mode have reported "no problems" with just simple mods. However, they didn't indicate whether they checked the spectrum for transmitted spurs.

```
>Could you e-mail me the mods for the Full Duplex on the Mitrek.  I'm
>about to do 5 of them for 9600 full duplex operation, for linking,
>and repeaters.  I have the manuals, I just don't know what should be done
>for the full duplex mods.  I can figure it out myself, but why re-invent
>the wheel.
>
>73
>Evan
>
>=========================================================================
>Evan E. Idler                     |         Of All The Things I've Lost
>ve6eei@ve6eei.ampr.ab.ca          |         In Life, I Miss My MIND The
>Edmonton, Alberta, Canada         |         Most!!!
>Amateur Packet Radio Station VE6EEI [192.75.200.5]
>=========================================================================
```

43. Re: [NETSIG:1943] Re: CQ CQ CQ

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Thu, 21 Sep 1995 03:39:02 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0svi5w-0002dtC@mtewe.kevin.mt.us>
Rendered body type: text/plain

```
>
> >>
> >>I bet most folks don't know the "two" ways of answering a CQ.
```

>
> 3. Connect to the node, then connect to the exact call shown in the
>   CQ, ie; if the call was kb5xtw-13> cq: any body... , then c kb5xtw-13.
>   This works with TN2.xx and TNX1x.x (the net) versions.
>
> 73 de Shawn, N7XBM.

I've been busy traveling and trying to make the most out of the
warm days we have remaining. So I slowed down a bit on the Email...

Shawn's description 3. is one of the "2" ways of calling CQ I had in
mind. While connected to a node you can do a U commmand and then
connect to the call-ssid of a station in CQ mode.

The "other way" is about the same but no connection to the node is
necessary. If you see a call to ->CQ, you can directly connect to
the call given and the X1J node (and TheNet Plus?) will respond to
the connect request as if the station was there locally.

I've been running NOS almost exclusively here (except for bicycle packet
and that will change next time out...) for the past 5 years so I wasn't
aware that some of the TNC's out would respond to CQ's... Sounds like a
neat feature - I wonder if anybody has had much luck using it.

I've never had an answer to a CQ. Best feature so far is the talk command
in X1J that allows a "Talk Hey VE6XYZ - type talk" prompt. It is kind
of frustrating to watch a CQ hop through the local node to one further
down the pipeline and not be able to break in to say high to caller...
It can turn into quite a chase trying to catch somebody else that's
nodehopping.

Forecast for tonight is 17F here. So much for summer in Montana.

73, Bill

--

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

44. Wish List Item

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 20 Sep 1995 14:03:51 -0500
To: netsig@tapr.org
Message-ID: <199509201903.OAA15778@mercury.texoma.com>
Rendered body type: text/plain

I want a plug-in TNC card setup with the reliability of a DRSI card.. Except
I want it to be TNC2 compatable.

Is there any particular reason this can't be done?

I wouldn't mind assigning the card the COM2 slot in the interest of software
compatability, as long as there were two TNC's on the card (or more)..

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

Budget the luxuries first!

45. Syntors and Proms???

From: Richard Hallman <ki3v@connectus.com>
Date: Thu, 21 Sep 1995 08:50:45 -0700
To: "'netsig@tapr.org'" <netsig@tapr.org>
Message-ID: <01BA87FF.70AFF560@rnodx.connectus.com>
Rendered body type: text/plain

Has anybody come up with a program that will enable a person to
burn Motorola Syntor PROMS in the Ham bands???   UHF Versions.....

                Thanks!! Rich KI3V ki3v@connectus.com

46. Re: [NETSIG:1992] Wish List Item

From: Chuck Hast <wchast@tma1.noname>
Date: Mon, 25 Sep 1995 13:08:23 -0400 (EDT)

To: netsig@tapr.org
Message-ID: <Pine.3.89.9509251348.A15989-0100000@tma1.noname>
Rendered body type: text/plain

Call PacComm, they have a TNC on a PC card, unlike the DRSI card it is a
full blown TNC on a pc card.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Ampr.org kp4djt.ampr.org
AX.121 3100813077

October 1995

Original source file: netsig.9510
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9510

1. ACL on X1J-4

From: djm@phx-az.com (Daniel Meredith)
Date: Mon, 2 Oct 1995 05:35:57 GMT
To: netsig@tapr.org
Message-ID: <9510012250011@phx-az.com>
Rendered body type: text/plain

Hi All,
    I'm trying to make the ACL work on one of the X1J nodes that we are operating. There is a battery voltage problem and I want to stop all uplinks to the node, I have set the default to 65, which should be BAR all incoming L2 connects and ignore the SSID, it isn't working for some reason. Everyone is still connecting up and going right along...I have myself set as 0 so I don't get locked out of the node....

Any ideas????

Daniel

----- \---------------/ -----
Arizona Network Intertie Group
"Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP Voice: +1-602-489-7384
P.O. Box 45378 Fax : +1-602-912-0426
Phoenix, Arizona BBS : +1-602-912-0225
85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator

2. Re: [NETSIG:1995] ACL on X1J-4

From: mbtindor@cris.com (Michael Tindor)
Date: Mon, 02 Oct 95 20:20:23 EDT
To: djm@phx-az.com
Cc: netsig@tapr.org
Message-ID: <199510030030.UAA06508@deathstar.cris.com>
Rendered body type: text/plain

On Mon, 2 Oct 1995 12:59:14 -0500 you wrote:

>Hi All,
>   I'm trying to make the ACL work on one of the X1J nodes that we are
>operating. There is a battery voltage problem and I want to stop all
>uplinks to the node, I have set the default to 65, which should be BAR
>all incoming L2 connects and ignore the SSID, it isn't working for some
>reason. Everyone is still connecting up and going right along...I have
>myself set as 0 so I don't get locked out of the node....
>
>Any ideas????
>
>
Daniel,

1) I'm glad to see you have set your own bits to 0!
2) Assuming that the ONLY thing you are using ACL for is to block incoming connects of any callsign with any SSID (excluding yours of course), then:

    ACL N7NRP + 0
    ACL & 65
    ACL * 65

    & is a mask. This tells the node what bits to even attempt to do any evaluating on. If this is set to 0, then it will not perform any checking of the ACL table at all. If your mask (&) is set to 0, it will not matter what values (*) you give to anything else because a & 0 will tell the node to NOT do any checking at all. You at least have to turn on the mask (&) bits for those functions you wish the ACL to do checking on.

    ACL * tells it to default to rejecting ANYTHING and EVERYTHING....except for other entries that are already in the ACL table (acl n7nrp + 0).

After you have set the mask (&), then set your value (*) and you are all set.

THe above example will allow you to connect and do whatever. It DISALLOWS
ALL incoming connects except yours.

Daniel, sorry about making it sound like I am talking to a kid......please don't take offense. That is just how I try to explain things..very thoroughly so that the next guy reading NETSIG who is interested will also be able to dissect the information.

Good luck
Mike

p.s. My guess is that you did not have your mask (&) set to a value that included
      64 (ignore SSIDs) and 1 (bar incoming L2 connects) at minimum.

mbtindor@cris.com   aa8ia@k3oiw.#wpa.pa.usa.noam
tindor@wb3boi-gw.physics.duq.edu
aa8ia@wb3boi-gw.physics.duq.edu

Michael Tindor
Toronto, OH
614-537-9234

3. X1j/4 info?

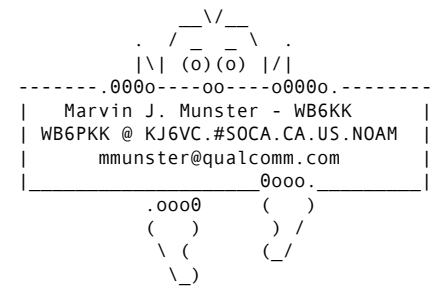
From: Marvin Munster x5388 <mmunster@qualcomm.com>
Date: Tue, 03 Oct 1995 08:15:03 -0700
To: netsig@tapr.org
Message-ID: <199510031508.IAA00870@dopey>
Rendered body type: text/plain

I understand that Buck Rodgers has produced some kind of manual for the
X1j/4. If this is true, how is one obtained? How much is it? What is his
address? I have not updated a node with the new firmware for two reasons,
probably both bad.

1> I have heard of conficting reports that loading the new firmware is
dificult for some one with limited resources and knowledge of doing such
things. I have the equipment, but there was a bunch of confusing
information a while back on how to do it. I anyone has more exacting
information on this procedure, I sure would appreciate it. It was a while
back, but I think the problem was with writing and loading such things as
the "help" file.

2> There were also rumors of a X1j/5 coming out soon. Any new information
on this?

Marvin.



4. Re: [NETSIG:1995] ACL on X1J-4

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 3 Oct 1995 08:34:27 -0600 (MDT)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.951003082940.12665A-100000@acca>
Rendered body type: text/plain

On Mon, 2 Oct 1995, Daniel Meredith wrote:

> Hi All,
>   I'm trying to make the ACL work on one of the X1J nodes that we are
> operating. There is a battery voltage problem and I want to stop all
> uplinks to the node, I have set the default to 65, which should be BAR
> all incoming L2 connects and ignore the SSID, it isn't working for some
> reason. Everyone is still connecting up and going right along...I have

> myself set as 0 so I don't get locked out of the node....
>
> Any ideas????

Dan I suggest you get the node and bring it home. You can do some almost complete rebuilds on that node as a remote sysop but, as luck has it, when your almost done you do something...and drive to the hill.
We went to sub-net status here and I changed the ip number and all the routes without a 200 mile drive. But I worried a lot....:)

>
>
> Daniel
>

Karl k5di

5. Re: [NETSIG:1996] Re: ACL on X1J-4

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr.)
Date: Tue, 03 Oct 1995 03:10:07 +0000
To: netsig@tapr.org
Message-ID: <9510030309.AA25239@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

>1) I'm glad to see you have set your own bits to 0!
>2) Assuming that the ONLY thing you are using ACL for is to block incoming
> connects of any callsign with any SSID (excluding yours of course), then:
>
> ACL N7NRP + 0
> ACL & 65
> ACL * 65
>
> & is a mask. This tells the node what bits to even attempt to do any
> evaluating on. If this is set to 0, then it will not perform any checking
> of the ACL table at all. If your mask (&) is set to 0, it will not matter
> what values (*) you give to anything else because a & 0 will tell the node
> to NOT do any checking at all. You at least have to turn on the mask (&) bits
> for those functions you wish the ACL to do checking on.
>
> ACL * tells it to default to rejecting ANYTHING and EVERYTHING....except for other
> entries that are already in the ACL table (acl n7nrp + 0).
>
>After you have set the mask (&), then set your value (*) and you are all set.
>
>THe above example will allow you to connect and do whatever. It DISALLOWS
>*ALL* incoming connects except yours.
>
>
>Daniel, sorry about making it sound like I am talking to a kid......please don't take offense. That is just how I try to explain things..very thoroughly so that the next guy reading NETSIG who is interested will also be able to dissect the information.
>
>Good luck
>Mike

Hmm... I wonder where that puts me... never mind, don't answer that. :)
I wonder if you would mind dropping to sub-kid and taking another run at it?
I fought the ACL thing a few years ago and was very wounded by the brick wall on the side of my head. In particular, I didn't follow the & discussion. ACL remains a mystery to at least one of us.

Thanks.

Gary McDuffie, Sr. AG0N Scottsbluff, NE
INTERNET: mcduffie@hannibal.wncc.cc.ne.us
PACKET RADIO: AG0N@AG0N.#WNE.NE.USA.NOAM

6. IP encap...

From: "John W. (Bill) Hays, W0OMV" <billh@netins.net>
Date: Tue, 03 Oct 1995 20:16:06 CST

To: netsig@tapr.org
Message-ID: <00997555.88FB5738.264@netins.net>
Rendered body type: text/plain

I saw it, downloaded or copied it, and apparently have subsequently pitched it. I'm talking abt the note from DeWayne Hendricks et al about hams not having to use ax.25 protocol to encapsulate the tcp/ip protocols within anymore.

Could someone quote both the original wording of the pertinent FCC rule and paragraph(s) and the new version that deletes that requirment...PLEASE

I put my foot in my mouth at last club mtg and now can't cover my AXX. Hi Hi

billh@netin.ins

73, Bill W0OMV

7. Re: [NETSIG:1999] Re: ACL on X1J-4

From: mbtindor@cris.com (Michael Tindor)
Date: Wed, 04 Oct 95 00:43:36 EDT
To: mcduffie@hannibal.wncc.cc.ne.us
Cc: netsig@tapr.org
Message-ID: <199510040458.AAA09462@deathstar.cris.com>
Rendered body type: text/plain

On Tue, 3 Oct 1995 11:06:21 -0500 you wrote:
>
>Hmm... I wonder where that puts me... never mind, don't answer that. :)
>I wonder if you would mind dropping to sub-kid and taking another run at it?
>I fought the ACL thing a few years ago and was very wounded by the brick
>wall on the side of my head. In particular, I didn't follow the &
>discussion. ACL remains a mystery to at least one of us.
>
>Thanks.
>
Garu,

Perhaps I can help you out since you basically say you didn't follow the & discussion and didn't say that you were totally in the dark...see, because if you were, I couldn't help you because I am absolutely no good at putting anything down on paper that comes from my head....here goes tho.

(the following lines in braces {} are taken from X1-J4 documentation)
{
 BIT   OPERATION
     === =
     0   bar incoming level 2 connection
     1   bar outgoing level 2 connection (downlink)
     2   ignore nodes broadcasts from this station
     3   bar gatewaying at level 3 to/from this station
     4   bar incoming level 4 connections
     5   bar outgoing level 4 connections
     6   ignore SSID in matching an entry
}
{
An ACL function mask is provided. This enables specific ACL
     functions to be disabled to speed up the node. Each bit of
     the mask enables (if set) or disables (if clear) the
     corresponding function. For example, if the mask is set to
     2, the node will only check its ACL for outgoing level 2
     connections.
}

HERE IS WHAT THEY DON"T PUT IN THE DOCUMENTATION AND *SHOULD*!!!

Note that each bit in the ACL function list has a value associated with it, i.e.,

bit 0 = 1
bit 1 = 2
bit 2 = 4
bit 3 = 8
bit 4 = 16
bit 5 = 32
bit 6 = 64
        ----
        127 is the highest possible # you can have for an ACL value of any type.

Now, the 1st paragraph above in { } explains the ACL & function pretty well now that I have played with it a while but I'll try to explain anyway...

Each of the above functions in the ACL function can be turned on or off, meaning that the ACL mask (&)

can be set so that the node ONLY scans the ACL list and acts upon certain events or functions and ignores totally the others which are not set. Why would you want to do this instead of just making ACL & 127 (which tells the nodes to do checking on all things)? Well, it is because it will take up CPUtime to do this, and if you have a busy node you may want to conserve as much CPU as possible.

So, if we know ahead of time that the only functions we are going to want the node to perform with the ACL function are to BAR INCOMING L2 CONNECTS, IGNORE NODES BROADCASTS FROM CERTAIN STATIONS, and IGNORE SSID MATCHING IN AN ENTRY, then to conserve CPU time, we will tell the node to only work on scanning the ACL to act upon THOSE functions and no other ones.

therefore, we set the ACL mask to 69

```
value
----
  1    bit 0 - BAR INCOMING L2 CONNECTS
  4    bit 2 - IGNORE NODES BROADCASTS FROM CERTAIN STATIONS
 64    bit 6 - IGNORE SSID MATCHING IN AN ENTRY
---
 69
```

```
   ACL & 69
```

If you have more questions, I'll try to answer them as best as possible. I just couldn't tackle whole thing in one fell swoop cuz it would have baffled me as well!

mbtindor@cris.com aa8ia@k3oiw.#wpa.pa.usa.noam
tindor@wb3boi-gw.physics.duq.edu
aa8ia@wb3boi-gw.physics.duq.edu

Michael Tindor
Toronto, OH
614-537-9234

8. Re: [NETSIG:2000] IP encap...

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 4 Oct 1995 07:09:27 -0600
To: netsig@tapr.org
Message-ID: <199510041309.HAA25945@acca.nmsu.edu>
Rendered body type: text/plain

At 07:47 AM 10/4/95 -0500, you wrote:
>I saw it, downloaded or copied it, and apparently have subsequently pitched it. I'm talking abt the note from DeWayne Hendricks et al about hams not having to use ax.25 protocol to encapsulate the tcp/ip protocols within anymore.
>
>Could someone quote both the original wording of the pertinent FCC rule and paragraph(s) and the new version that deletes that requirment...PLEASE
>
>I put my foot in my mouth at last club mtg and now can't cover my AXX. Hi Hi
>
>billh@netin.ins
>
>73, Bill W0OMV
>

I'll look around Bill. I have this stuff on MY computer since I just installed Eudora, the wonderful mailer program...

73, karl k5di

9. Re: [NETSIG:2001] Re: ACL on X1J-4

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 4 Oct 1995 07:16:15 -0600
To: netsig@tapr.org
Message-ID: <199510041316.HAA26230@acca.nmsu.edu>
Rendered body type: text/plain

At 07:50 AM 10/4/95 -0500, you wrote:
>On Tue, 3 Oct 1995 11:06:21 -0500 you wrote:

>Perhaps I can help you out since you basically say you didn't follow the & discussion and didn't say that you were totally in the dark...see, because if you were, I couldn't help you because I am absolutely no good at putting anything down on paper that comes from my head....here goes tho.
>
>(the following lines in braces {} are taken from X1-J4 documentation)
>{
> BIT   OPERATION
>   == =
>   0   bar incoming level 2 connection

>   1   bar outgoing level 2 connection (downlink)
>   2   ignore nodes broadcasts from this station
>   3   bar gatewaying at level 3 to/from this station
>   4   bar incoming level 4 connections
>   5   bar outgoing level 4 connections
>   6   ignore SSID in matching an entry
>}
>{
>An ACL function mask is provided. This enables specific ACL
>   functions to be disabled to speed up the node. Each bit of
>   the mask enables (if set) or disables (if clear) the
>   corresponding function. For example, if the mask is set to
>   2, the node will only check its ACL for outgoing level 2
>   connections.
>}
>
>HERE IS WHAT THEY DON"T PUT IN THE DOCUMENTATION AND *SHOULD*!!!
>
>Note that each bit in the ACL function list has a value associated with it,
i.e.,
>
>bit 0 = 1
>bit 1 = 2
>bit 2 = 4
>bit 3 = 8
>bit 4 = 16
>bit 5 = 32
>bit 6 = 64
>   ----
>   127   is the highest possible # you can have for an ACL value of
any type.
>
>Now, the 1st paragraph above in { } explains the ACL & function pretty well
now that I have played with it a while but I'll try to explain anyway...
>
>Each of the above functions in the ACL function can be turned on or off,
meaning that the ACL mask (&) can be set so that the node ONLY scans the ACL
list and acts upon certain events or functions and ignores totally the
others which are not set. Why would you want to do this instead of just
making ACL & 127 (which tells the nodes to do checking on all things)?
Well, it is because it will take up CPUtime to do this, and if you have a
busy node you may want to conserve as much CPU as possible.
>
>So, if we know ahead of time that the only functions we are going to want
the node to perform with the ACL function are to BAR INCOMING L2 CONNECTS,
IGNORE NODES BROADCASTS FROM CERTAIN STATIONS, and IGNORE SSID MATCHING IN
AN ENTRY, then to conserve CPU time, we will tell the node to only work on
scanning the ACL to act upon THOSE functions and no other ones.
>
>therefore, we set the ACL mask to 69
>
>value
>----
> 1   bit 0 - BAR INCOMING L2 CONNECTS
> 4   bit 2 - IGNORE NODES BROADCASTS FROM CERTAIN STATIONS
> 64   bit 6 - IGNORE SSID MATCHING IN AN ENTRY
>---
> 69
>
>   ACL & 69
>
>If you have more questions, I'll try to answer them as best as possible. I
just couldn't tackle whole thing in one fell swoop cuz it would have baffled
me as well!
>
>mbtindor@cris.com   aa8ia@k3oiw.#wpa.pa.usa.noam
>tindor@wb3boi-gw.physics.duq.edu
>aa8ia@wb3boi-gw.physics.duq.edu
>
>Michael Tindor
>Toronto, OH
>614-537-9234
>
>
        Michael, keep up the good work! I have looked at ACL for 2 years now
and wondered what to do with it. Now I know. But Robert says in the manual,
don't mess with ACL unless you know exactly what your doing. I just didn't
mess with it...:)

-karl k5di

10. Re: [NETSIG:2000] IP encap...

From: glg@balrog.k8lt.ampr.org (Gary L. Grebus)
Date: Wed, 4 Oct 95 21:28 EDT
To: netsig@tapr.org
Message-ID: <m0t0f79-0002I7C@balrog.k8lt.ampr.org>
Rendered body type: text/plain

CFR 47 Part 97 as of November, 1993 said:

97.109....

(e) No station may be automatically controlled while transmitting third-party communications, except a station retransmitting digital packet radio communications on the 6 m and shorter wavelength bands. Such stations must be using the American Radio Relay League, Inc. AX. 25 Amateur Packet-Radio Link-Layer Protocol, Version 2.0, October 1984 (or compatible). The retransmitted messages must originate at a station that is being locally or remotely controlled.

As of April 26, 1995 this section was amended to say:

97.109....

(e) No station may be automatically controlled while transmitting third-party communications, except a station participating as a forwarding station in a message forwarding system.

There is no longer a mention of AX.25 in the Part 97 rules.

/gary

Gary L. Grebus Home: glg@k8lt.ampr.org
Brookline, NH Work: grebus@eng.pko.dec.com
Ham Packet: K8LT@WA1PHY.#EMA.MA.USA

11. Re: [NETSIG:2003] Re: ACL on X1J-4

From: mbtindor@cris.com (Michael Tindor)
Date: Thu, 05 Oct 95 09:51:04 EDT
To: k5di@acca.nmsu.edu
Cc: netsig@tapr.org
Message-ID: <199510051412.KAA17359@deathstar.cris.com>
Rendered body type: text/plain

>>
>>
> Michael, keep up the good work! I have looked at ACL for 2 years now
>and wondered what to do with it. Now I know. But Robert says in the manual,
>don't mess with ACL unless you know exactly what your doing. I just didn't
>mess with it...:)
>
>-karl k5di
>

Karl, it took me a very long time to figure out what to do with ACL too. What is neat is that you can make it a reject or an accept list. For instance, we have a few nodes in our network here. 3 of those nodes are on 145.07 (for now). One of these nodes is very high profile and heres everything under the sun...i.e., netrom nodes from quite a bit farther away than it can really reliably work them.

At first I was going to keep the ACL * 0 (set so the ACL does nothing unless there is a specific entry for a callsign), and I was going to add EACH individual node in the ACL list that this node could here but could NOT reliably work. That was like four different nodes. And, if I were to have kept it like this, anytime a new node came on frequency I would have to add it to the list.

I scrutinized the documentation some more and realized that I could set the default to ACL * 4 and then it would IGNORE nodes broadcasts from ALL stations unless they were SPECIFICALLY ENTERED in the list. This way, all I had to do was add two other nodes to the list.

ACL * 4
ACL & 4
ACL n8sjs-2 + 0
ACL wb8fpn-2 + 0

This would ignore nodes broadcasts from everybody BUT would ACCEPT broadcasts from N8SJS-2 and WB8FPN-2.

I realize you probaly didn't need to know this, but I just think this ACL thing is really powerful if you hvae the need to do it. We have a couple backbones which we disallow connects on for instance since they are (in our eyes) point-to-point only...that is another use for it.

73
Mike

12. Re: [NETSIG:2005] Re: ACL on X1J-4

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Fri, 6 Oct 1995 10:44:44 -0500
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199510061544.KAA03264@sys1.tapr.org>
Rendered body type: text/plain

At 06:31 AM 10/6/95 -0500, Michael Tindor wrote:
[SNIP]
>Karl, it took me a very long time to figure out what to do with ACL too.
What is neat is that you can make it a reject or an accept list. For
instance, we have a few nodes in our network here. 3 of those nodes are on
145.07 (for now). One of these nodes is very high profile and heres
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>ACL * 4
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broadcasts from N8SJS-2 and WB8FPN-2.
>
>I realize you probaly didn't need to know this, but I just think this ACL
thing is really powerful if you hvae the need to do it. We have a couple
backbones which we disallow connects on for instance since they are (in our
eyes) point-to-point only...that is another use for it.
>
>73
>Mike

Mike, I'm in the same boat as Karl, didn't have the foggiest idea of what
the ACL function does, but thanks to your clear-cut explanation and
examples, it's starting to make sense!

After reading the above, I'm wondering if this can't be a solution to a
problem our local network is experiencing. We have new users experimenting
with tcpip nodes. They come on for a day or less, then go away for short
periods. Each time, they send out either corrupted nodes broadcasts or
stale nodes broadcasts. Really does a number on network routing! For
awhile I was even noticing neighbor node aliases being replaced with ##TEMP
aliases in their ROUTES table!

In other words, on BISBEE's neighbor node SVA, BISBEE:WA7KYT-1 would be
REPLACED on the ROUTES list as ##TEMP:WA7KYT-1.   I have no idea as to HOW
this could occur. When I locked the suspect tcpip station out at SVA, this
situation, along with other false routing pointers, cleared up on SVA.
However, other neighbor nodes experienced similar problems.

Well, I don't want to lock anyone out but it sometimes gets confrontational
when attempting to explain networking facts to certain people. Most tcpip
nodes are set for end terminal use and are either netrom silent or broadcast
only their individual presence.   This, coupled with being there 24 hours
per day, doesn't confuse the network. As the popularity of tcpip grows,
we've seen more and more network problems locally due to deviation from this
standard practice.

Looks to me the simplest solution would be to set up the X1J's to only
respond to their best neighbor's broadcasts. This would still allow the
tcpers to do their thing while not disrupting the 'regular' network.

Anyone else have something to contribute to this thread?

73 de Jack

13. Re: [NETSIG:2000] IP encap...

From: "Tom Moulton" <tmoulton@ram.net>
Date: Fri, 06 Oct 95 10:58:06 EDT
To: netsig@tapr.org
Message-ID: <15021573.1ea2@ram.net>
Rendered body type: text/plain

>I saw it, downloaded or copied it, and apparently have subsequently pitched
>it. I'm talking abt the note from DeWayne Hendricks et al about hams not hav
>ing to use ax.25 protocol to encapsulate the tcp/ip protocols within anymore
>.

It is true (see previous posting) that ax25 isn't needed anymore, BUT
Don't forget that you do need SOMETHING to provide hardware/physical
Addressing.

Even Ethernet encapsulates IP frames within 802.3 to provide access to
the medium.

I am not saying that AX25 is the Best for IP, but it does work and
there might be other things that need more attention.

_____ _____ _____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

14. Re: [NETSIG:2006] Re: ACL on X1J-4

From: mbtindor@cris.com (Michael Tindor)
Date: Fri, 06 Oct 95 19:38:17 EDT
To: n7oo@hereford.ampr.org
Cc: netsig@tapr.org
Message-ID: <199510062349.TAA00183@deathstar.cris.com>
Rendered body type: text/plain

>Mike, I'm in the same boat as Karl, didn't have the foggiest idea of what
>the ACL function does, but thanks to your clear-cut explanation and
>examples, it's starting to make sense!
>

Gee, I actually feel a little useful for once. I grab so much good info from others who answer my questions and who donate their time to helping us all out...sure glad to be of help.

>After reading the above, I'm wondering if this can't be a solution to a
>problem our local network is experiencing.

Seems to me that it definitely is the easiest answer.

I am not sure that you use your ACL for anything else, but I would do this, assuming that you dont have ACL set up to perform other functions already.

ACL & 4 (does checking only on the IGNORE NODES B'CAST)
ACL * 4 (defaults to IGNORING node b'casts from ALL, unless in ACL table)

ACL good_net_broadcast_node_callsign + 0 (for each reliable b'casting node)

>We have new users experimenting
>with tcpip nodes. They come on for a day or less, then go away for short
>periods. Each time, they send out either corrupted nodes broadcasts or
>stale nodes broadcasts. Really does a number on network routing! For
>awhile I was even noticing neighbor node aliases being replaced with ##TEMP
>aliases in their ROUTES table!

Well, I haven't experienced that exact thing, but I do know exactly what you are saying about Newbies to xNOS setting up netrom nodes to play arond with them and then fouling up the nodes tables of local 24-hour nodes...I'm not ragging on them...I did it myself when I first started out (fortunately the nodes I bothered at hte time were not worth a pot to pee in anyway).

Mike

15. Reliability vs. performance.

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Sun, 8 Oct 1995 00:28:07 -0700 (MDT)
To: NETSIG TAPR <netsig@tapr.org>
Message-ID: <m0t1pDW-0002dvC@mtewe.kevin.mt.us>

Rendered body type: text/plain

I'm curious what folks think about the following. I'd appreciate
hearing of any experiences.

There are still many areas near here with 145.010 mesh networks. There
is much discussion on improving these systems with backbones on other
frequencies. Lacking the resources to put in the dedicated high speed full
duplex links that would really be nice - the plan usually ends up calling
for a single UHF system at each node site to carry the node-to-node
traffic. A reasonable setup for the given circumstances. Now the
question. Assuming these nodes are connected to their neighbors by
a working UHF system - should the 2 meter system:

  A. change 2 meter channels as necessary to prevent interference to/from
      adjoining nodes giving clear frequencies and best performance?

  B. maintain user access on 145.010 and live with the reduced level
      of interference? Having the old, 145.010, network to fall back on
      if the UHF system fails is worth the loss of performance.

I'm advocating "B" when I get in networking discussions.   The experience
with the Montana backbone has shown how fragile a long distance UHF
network can be. When the paths change with weather or when equipment
fails - the nodes with clear channels are completely cut off. The
areas that still have 145.010 maintain contact with reduced performance.

Bill

--

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

16. Re: Raw IP

From: "Tom Moulton" <tmoulton@ram.net>
Date: Sun, 08 Oct 95 11:52:57 EDT
To: netsig@tapr.org
Message-ID: <15021573.1eab@ram.net>
Rendered body type: text/plain

Forwarded from private email, with permission.

>From: ssampson@icon.net (Steve Sampson)
>Subject: Raw IP
>Date: Sat, 07 Oct 1995 19:25:21 -0500
>Reply-To: ssampson@icon.net
>To: tmoulton@ram.net
>
>> It is true that ax25 isn't needed anymore, BUT Don't forget that you do ne
>ed
>> SOMETHING to provide hardware/physical Addressing.
>>
>> Even Ethernet encapsulates IP frames within 802.3 to provide access to
>> the medium.
>>
>> I am not saying that AX25 is the Best for IP, but it does work and
>> there might be other things that need more attention.
>
>Most Amateur IP doesn't go very far. For this reason the IP routing to take
>can be directly put into the table. There's a system that is not known too
>well off the wireline, but is more common in systems that can't stand the
>automation. That is, in the past there were some routers that were too smart
>for their own good :-) The IP protocol provides a Strict Route feature.
>That is, each hop replaces the destination address with the next route in a
>list that follows the IP. At the end, all that is left is the IP, but at
>the start there is the IP with a packet of routes to follow. It is probably
>not economical to do that today except on private networks, but it does show
>that the IP doesn't really need a layer to transport it.

That sounds much like Digipeating without the Has_Been_Repeated bit....

But due to the shared nature of radio channels (interference, etc) many
will agree that Something is needed for collision avoidance/detection.

It is far worse on an RF channel than ethernet, which has it's own
contention procedures.

Even a point to point channel can have interference fron spurs, other

systems on the fringe that raise the noise floor even when using a
different modulation scheme.

Even if raw IP were run over a few hops, it could work and let tcp recover
what ever datagrames were lost fairly well. That is end to end recovery,
which we discovered 10 years ago doesn't work well, due to the slow speeds
that we can get over long distances. (Slow Speed == Long Round Trip Time)

If this group of raw IP stations were to accept traffic from outside they
better have a protocol to make sure they don't drop a datagram, because
the real end point stations could be anywhere and would likely timeout.
In any event it would still be end to end recovery...

You mention that many IP lans are very small. From what I have seen they
are not generally inter-connected either.

With ROSE I am trying to help.

Right now there are IP stations in Fla that connect with IP stations in TX.
(Yes ROSE at work)

>
>Stuff that needs more attention? Yes, I guess. Anyone following a packet
>discussion for any length of time quickly concludes that the network protoco
>ls
>are too complex. There are still too many variables in the protocols. What

I think to a point you are right. I think that the User systems need to be
simpler. The network systems need to provide less complex access to the
network.

>What
>this country needs is a switch that you input your callsign, input your radi
>o
>baud rate, and that's it. The rest is automated.

I agree for end user systems.

> And I don't mean 40 line
>netrom broadcasts, or manual configured routes. Packet radio sites are few
>and far between!

Yes bandwidth is precious. Manual configured routes are a lot of work, which
can be automated with external programs.

> We need simplicity, not wireline complexity. That said,
>I think the quicker Hams get off of AX.25 the better!!

AX.25 is just one very small part of the picture.
>
>---
>Steve/n5owk
>

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

17. Re:(2) Raw IP

From: "Tom Moulton" <tmoulton@ram.net>
Date: Sun, 08 Oct 95 13:01:09 EDT
To: netsig@tapr.org
Message-ID: <15021573.1ead@ram.net>
Rendered body type: text/plain

Upon thinking about what I said more..
>
>Right now there are IP stations in Fla that connect with IP stations in TX.
>(Yes ROSE at work)

This path does have a commerical segment, running ROSE, but I know that
other paths of long distances work fine using ROSE.

One other point I left out is that disjoint IP networks can be connected
through AX.25 based backbones, even if a handfull of stations run raw IP.

____
Thomas A. Moulton, W2VY   RAM Mobile Data

w2vy@ram.net (908) 602-5227

18. Backbone Routing Protocol (BRP)

From: ssampson@icon.net (Steve Sampson)
Date: Sun, 08 Oct 1995 16:15:53 -0500
To: netsig@tapr.org
Message-ID: <199510082117.QAA29226@ns2.icon.net>
Rendered body type: text/plain

A recent discussion about non-AX.25 packet has enticed me to upload this. It's a file I hack on now and then. While the idea isn't complete, and the packet size will grow quite rapidly based on the number of hops, it would be usuable for systems of 3 to 5 hops between gateways. The idea was to find some way to experiment with non-AX.25 packet. The AMA <-> OKC path is hypothetical, as there is no lottery in Oklahoma :-)

====

DRAFT

Backbone Routing Protocol

Introduction

This protocol (BRP) offers a simple solution to routing data over a radio network. The protocol is designed to be completely managed by the network administrators. The network uses Point-To-Point nodes, and is completely defined. No automation is used in routing. The protocol is designed to directly drive an HDLC device. Thus there is no Media Layer such as AX.25 or Ethernet.

The protocol is based on the Internet Protocol (IP). The only difference is that the BRP makes use of the Source Route feature. The Source Route feature was designed into IP from the beginning. There are two types: Loose Source and Strict Source. Strict Source means that each node must follow the route exactly as specified, without exception. If the route is broken, then the network is down.

If a network has thousands of nodes, this type of network would be unmanageable. The packet radio network should be designed to transport data over great distances. The more nodes, the slower the network; therefore, most network designs have become highly complicated by enormous routing algorithms, most of which isn't needed, as there are normally very few hops to traverse.

Getting On the Network

The initial idea is to implement the protocol as part of the KA9Q NOS program. This software is easily modified, and can be used to implement a gateway to this backbone network. There of course will be no users accessing the backbone directly, and some method of transporting AX.25 users over this network is necessary. Another option besides this NOS gateway, is to use a pair of TNC back to back. Here one would be a BRP node, and the other a standard AX.25 node, each interfaced via the serial ports onto the stack.

What the Managers Do

The network managers know where all the nodes are because they build and maintain them. They know the routes, and the quality. They don't just put it on the air and hope for the best. They know the complete path, and all the other managers. They can completely coordinated the addresses via electronic mail, or voice (radio or telephone).

For example, a network designed to connect Amarillo Texas (AMA) with Oklahoma City (OKC) has five nodes spaced out at various distances. The BRP node in OKC must have four Strict Source Routes attached to route the packets to AMA. The same for AMA to OKC. The number of nodes is too small to automate, and is easily managed; indeed, as intended, it also covers a very great distance with very few nodes. Note, A dead node will cripple a network whether it's automated or Strict Routed. The managers decide end to end initial timing and MTU.

The Hop Node

There are two options for the hop node. The obvious first choice is another NOS gateway. The second choice is a TNC. Software to implement the protocol should make use of raw IP datagrams (no link timing problems) interfaced to the HDLC chip. The HDLC will then provide the Flags, bit stuffing, and Checksum encapsulation of the IP data. No other protocol will be attached (for example AX.25, or Ethernet).

Some Size Examples

For a Half-Duplex design, we would install five nodes from OKC to AMA. For a Full-Duplex design we would have eight nodes; the three center hops using two nodes each, with different IP addresses, and transmit-receive frequency pairs.

The first example of a Half-Duplex design would use a packet data size of 216 bytes, and this would result in 256 byte IP packets. With four Strict Routes added, for a total size of 384 bytes.

The second example of a Full-Duplex design would use a packet data size of 472 bytes, and this would result in 512 byte IP packets. Here we would have seven Strict Routes add, for a total size of 736 bytes.

Note however, that the number of bytes transmitted falls off by four each hop (each 32 bit address discarded).

This overhead seems high when compared to the current routing protocols, but it does simplify the routing code of each switch. In the case of a TNC, the software becomes nothing more than an IP regenerator; easily designed and debugged.

Configuration

Using NOS, the port will be attached using modifications to standard configuration options:

```
OKC
     attach asy 0x3f8 4 brp bb0 2048 256 4800
     broute add 10.0.77.1 bb0 78.2 78.3 2

AMA
     attach asy 0x3f8 4 brp bb0 2048 256 4800
     broute add 10.0.78.1 bb0 77.2 3 2
```

Where the numbers after the port label "bb0" are the hop node addresses. The common subnet bytes, as compared to the destination IP address, are optional. The computer can easily expand the input, out to the full 32 bits. This would save much typing.

Note, there is no need or use of any ARP, RARP, RIP, etc.

DRAFT

====

Something to read along with your Orange Juice, Corn Flakes, and Bratwurst...

19. Re: [NETSIG:2010] Re: Raw IP

From: ssampson@icon.net (Steve Sampson)
Date: Mon, 09 Oct 1995 07:36:50 -0500
To: netsig@tapr.org
Message-ID: <199510091238.HAA07266@ns2.icon.net>
Rendered body type: text/plain

>That sounds much like Digipeating without the Has_Been_Repeated bit....

I see your point. I guess then, any protocol which doesn't use a connected mode with link level timing is without favor. The only thing I don't like about link level timing, is that there are a lot of sites which do it wrong. The defaults are wrong usually. In some cases the defaults are worse than digipeating. I guess my feeling is, the node to node timing should be very agressive, but then the reason most use any link timing, is that there are too many nodes on one frequency, economics versus doing it right.

>Even a point to point channel can have interference fron spurs, other
>systems on the fringe that raise the noise floor even when using a

>different modulation scheme.
>
>Even if raw IP were run over a few hops, it could work and let tcp recover
>what ever datagrames were lost fairly well. That is end to end recovery,
>which we discovered 10 years ago doesn't work well, due to the slow speeds
>that we can get over long distances. (Slow Speed == Long Round Trip Time)

Hams are conditioned for slow speed. There's nothing we do that requires high speed. In most cases it's either BBS traffic, or SMTP traffic. There's not much else. I hear that Clover is popular in some places, but I can't imagine speed being a factor there. I guess I finally accepted this fact, and weigh the need for agressive node link layers over single frequency network hops. It doesn't really matter to me one way or the other.

>If this group of raw IP stations were to accept traffic from outside they
>better have a protocol to make sure they don't drop a datagram, because
>the real end point stations could be anywhere and would likely timeout.
>In any event it would still be end to end recovery...

I've adopted store and forward mail technique. I address the mail for another user via a stop point. For example, if I use k5jb%k5jb.cray@n0els.ampr.org this results in the mail being sent to n0els, where he sends it on to k5jb. This also works well if I want to send the same mail to several users. Here the SMTP sends one letter from me to n0els, and he then distributes them seperately. In my case, my station usually can't reach these people unless I point my beam at them, so I adopted a store and forward scheme. I could just connect direct, but it is actually faster this way. If I wanted to send mail to someone in Florida, I could drop the mail on n0els, he then could drop it on wb5cqu, and wb5cqu could pass it on over the telco line to Florida. This gets away from the typical 2 minute end to end timing.

>You mention that many IP lans are very small. From what I have seen they
>are not generally inter-connected either.

We use Rose between OKC and Dallas, thanks to Larry wb5cqu.

>>What this country needs is a switch that you input your callsign, input
>>your radio baud rate, and that's it. The rest is automated.
>
>I agree for end user systems.

Well I didn't state my point clearly. The problem with netrom, rose, and BPQ, as I see it, is the availability of timing parameters that are not cross checked to make sure it makes sense. The Frack can be any value, and the other timers are not checked for sanity. You get this timing wrong and people won't even use the network. So what I mean't was that the timing needs to be removed from the typical admins hands. The timings probably based on baud rate, and with that, certain assumptions can be made. Link level is link level, so all you have to worry about is node to node. So I was thinking about network systems, not end user systems.
--
Steve/n5owk

20. ACL On X1J-4

From: system.administrator@phx-az.com (System Administrator)
Date: Mon, 9 Oct 1995 05:33:00 GMT
To: netsig@tapr.org
Message-ID: <9510822593420@phx-az.com>
Rendered body type: text/plain

Hi All,
        First off thanks to everyone that responded to my first post for help.

I have since been playing with the ACL command and have noticed some things that the manual does not talk about.

I have a backbone TNC that I do not want the users fooling with, the purpose of the TNC is simply to provide L3 gatewaying, so I thought i'd be clever and mess with the ACL command and found that it doesn't work quite like it sounds in the manual. My purpose was to stop any outgoing L2 downlinks and anyone attempting to make a L4 downlink if they connected to this particular TNC. However I want to be able to make a L2 or L4 downlink for test purposes etc. Therefore disabling the CONNECT command by typing CONNECT - was not an option. So following the instructions, I enabled the 2nd, 4th and 6th BIT on the ACL * and ACL &. The value comes to 98. I entered for myself N7MRP a value of 0.

The ACL when listed showed:

```
ACL Default: 98 Mask: 98
N7MRP 0

Ok,  so now you can "assume" that anyone that connects up to the node
will not be allowed to make a downlink accept for N7MRP who should be
able to make a downlink.  Guess what,  WRONG!  I went through several
attempts monkying with the values and I can not find a way for N7MRP to
make a downlink.  It keeps on saying,  "sorry can not connect."  However
when I remove the default and mask restriction it works.  My
understanding of ACL and what the documentation says, is that a scan is
made to determined what someone can or can't do and if they have a value
of 0 and the SSID is matching,  he/she should have full access.  I have
found this is not the case and I'm curious if anyone else is
experiencing the same scenario.

I also must state,  that you should ALWAYS include the EXACT SSID when
entering in yourself as 0 because if you are locking the node down,  you
won't get back in because the SSID is literal.  So if your connect comes
in with a -10,  you better have N7MRP-10 or your not going to get in.
Of course I'm referring to the case when you are coming in through the
network etc.  I had to enter in the exact SSID of the TNC on the RS-232
so I could come in the back door, becuase without the SSID it refused to
work.

Daniel

-----                      \---------------/                        -----
                     Arizona Network Intertie Group
                 "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP                   Voice: +1-602-489-7384
P.O. Box 45378                               Fax  : +1-602-912-0426
Phoenix,  Arizona                            BBS  : +1-602-912-0225
          85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator

---
 * OLXWin 1.00 * Press any key to continue or any other key to quit
```

21. Re: [NETSIG:2013] Re: Raw IP

```
From: "Tom Moulton" <tmoulton@ram.net>
Date: Mon, 09 Oct 95 11:50:44 EDT
To: netsig@tapr.org
Message-ID: <15021573.1eb1@ram.net>
Rendered body type: text/plain
```

```
>>That sounds much like Digipeating without the Has_Been_Repeated bit....
>
>I see your point.  I guess then, any protocol which doesn't use a connected
>mode with link level timing is without favor.  The only thing I don't like
>about link level timing, is that there are a lot of sites which do it wrong.

I personally do advocate connected mode for the internal operation of the
backbone, but recently have seen advantages for connectionless access
by user stations.

But that is NOT to say that the backbone is required to be connection
oriented. I just feel that the backbone should take full responsibility
for relaying the data OR sending a notification that it failed.

This could be due to my early NTS training... :]

>
>The defaults are wrong usually.  In some cases the defaults are worse than
>digipeating.  I guess my feeling is, the node to node timing should be very
>agressive, but then the reason most use any link timing, is that there are
>too many nodes on one frequency, economics versus doing it right.

If collections of nodes are handled as a network rather than single nodes
you can acheive better uniformity.

And we all agree that too many emitters on one channel Can't work well...

>
>>Even a point to point channel can have interference fron spurs, other
>>systems on the fringe that raise the noise floor even when using a
```

>>different modulation scheme.
>>
>>Even if raw IP were run over a few hops, it could work and let tcp recover
>>what ever datagrames were lost fairly well. That is end to end recovery,
>>which we discovered 10 years ago doesn't work well, due to the slow speeds
>>that we can get over long distances. (Slow Speed == Long Round Trip Time)
>
>Hams are conditioned for slow speed. There's nothing we do that requires
>high speed. In most cases it's either BBS traffic, or SMTP traffic. There'
>s
>not much else. I hear that Clover is popular in some places, but I can't
>imagine speed being a factor there. I guess I finally accepted this fact, a
>nd
>weigh the need for agressive node link layers over single frequency
>network hops. It doesn't really matter to me one way or the other.
>
We need to start bringing the applications that are sexy and need higher
speed to radio and maybe hams will be willing to pay for the higher
speed radio channels.

>>If this group of raw IP stations were to accept traffic from outside they
>>better have a protocol to make sure they don't drop a datagram, because
>>the real end point stations could be anywhere and would likely timeout.
>>In any event it would still be end to end recovery...
>
>I've adopted store and forward mail technique. I address the mail for anoth
>er
>user via a stop point. For example, if I use k5jb%k5jb.cray@n0els.ampr.org
>this results in the mail being sent to n0els, where he sends it on to k5jb.
>This also works well if I want to send the same mail to several users. Here
>
>the SMTP sends one letter from me to n0els, and he then distributes them
>seperately. In my case, my station usually can't reach these people unless
>I point my beam at them, so I adopted a store and forward scheme. I could
>just connect direct, but it is actually faster this way. If I wanted to
>send mail to someone in Florida, I could drop the mail on n0els, he then
>could drop it
>on wb5cqu, and wb5cqu could pass it on over the telco line to Florida. This
>gets away from the typical 2 minute end to end timing.

oops... I was thinking of Real-Time things like Telnet, FTP, Crowd, etc
>
>>You mention that many IP lans are very small. From what I have seen they
>>are not generally inter-connected either.
>
>We use Rose between OKC and Dallas, thanks to Larry wb5cqu.
>
>>>What this country needs is a switch that you input your callsign, input
>>>your radio baud rate, and that's it. The rest is automated.
>>
>>I agree for end user systems.
>
>Well I didn't state my point clearly. The problem with netrom, rose, and BP
>Q,
>as I see it, is the availability of timing parameters that are not cross
>checked to make sure it makes sense. The Frack can be any value, and the
>other timers are not checked for sanity. You get this timing wrong and peop
>le
>won't even use the network. So what I mean't was that the timing needs to b
>e
>removed from the typical admins hands. The timings probably based on baud
>rate, and with that, certain assumptions can be made. Link level is link
>level, so all you have to worry about is node to node. So I was thinking
>about network systems, not end user systems.

In ROSE we have an external application (NETMGR) that has a GUI for entering
the MAP of the sites and it does very well to keep things uniform.

These external tools can do a lot to help these systems work with much less
error and manual labor.

____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

22. Re: [NETSIG:2009] Reliability vs. performance.

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Mon, 09 Oct 95 12:26:54 CST
To: netsig@tapr.org
Message-ID: <23349@k0vm.ampr.org>
Rendered body type: text/plain

In message <m0t1pDW-0002dvC@mtewe.kevin.mt.us> netsig@tapr.org writes:
>
> I'm curious what folks think about the following. I'd appreciate
> hearing of any experiences.
>
> There are still many areas near here with 145.010 mesh networks. There
> is much discussion on improving these systems with backbones on other
> frequencies. Lacking the resources to put in the dedicated high speed full
> duplex links that would really be nice - the plan usually ends up calling
> for a single UHF system at each node site to carry the node-to-node
> traffic. A reasonable setup for the given circumstances. Now the
> question. Assuming these nodes are connected to their neighbors by
> a working UHF system - should the 2 meter system:
>
>   A. change 2 meter channels as necessary to prevent interference to/from
>   adjoining nodes giving clear frequencies and best performance?
>
>   B. maintain user access on 145.010 and live with the reduced level
>   of interference? Having the old, 145.010, network to fall back on
>   if the UHF system fails is worth the loss of performance.
>

How about C.
C. Keep the 145.010 for network backup channel add a second two
meter user access port... (on 147.??? to reduce self sense
problems)

> I'm advocating "B" when I get in networking discussions.   The experience
> with the Montana backbone has shown how fragile a long distance UHF
> network can be. When the paths change with weather or when equipment
> fails - the nodes with clear channels are completely cut off. The
> areas that still have 145.010 maintain contact with reduced performance.
>
> Bill
>
> --
>
> Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
> Reply-To: vodall@bigsky.dillon.mt.us
> Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>
>
>
-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

23. Re: [NETSIG:2006] Re: ACL on X1J-4

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 11 Oct 1995 09:29:36 -0600
To: netsig@tapr.org
Message-ID: <199510111529.JAA16099@acca.nmsu.edu>
Rendered body type: text/plain

At 03:36 PM 10/6/95 -0500, you wrote:
>At 06:31 AM 10/6/95 -0500, Michael Tindor wrote:
>[SNIP]

>
>Mike, I'm in the same boat as Karl, didn't have the foggiest idea of what
>the ACL function does, but thanks to your clear-cut explanation and
>examples, it's starting to make sense!
>
>After reading the above, I'm wondering if this can't be a solution to a
>problem our local network is experiencing. We have new users experimenting
>with tcpip nodes. They come on for a day or less, then go away for short
>periods. Each time, they send out either corrupted nodes broadcasts or
>stale nodes broadcasts. Really does a number on network routing! For
>awhile I was even noticing neighbor node aliases being replaced with ##TEMP
>aliases in their ROUTES table!

        Jack old buddy, you are a prime subject for the wonders of "subnet"
and other nice things that only a few know how to do. Put another way down

here we don't let a new tcp/ip guy on with any "netrom" routes. The only
route he has is to a x1j node. That node in turn is set to connect him with
the world.

        Of course you need to find the guy and "help" him get the most from it.

>
>In other words, on BISBEE's neighbor node SVA, BISBEE:WA7KYT-1 would be
>REPLACED on the ROUTES list as ##TEMP:WA7KYT-1.   I have no idea as to HOW
>this could occur. When I locked the suspect tcpip station out at SVA, this
>situation, along with other false routing pointers, cleared up on SVA.
>However, other neighbor nodes experienced similar problems.
>
>Well, I don't want to lock anyone out but it sometimes gets confrontational
>when attempting to explain networking facts to certain people. Most tcpip
>nodes are set for end terminal use and are either netrom silent or broadcast
>only their individual presence.   This, coupled with being there 24 hours
>per day, doesn't confuse the network. As the popularity of tcpip grows,
>we've seen more and more network problems locally due to deviation from this
>standard practice.
>
>Looks to me the simplest solution would be to set up the X1J's to only
>respond to their best neighbor's broadcasts. This would still allow the
>tcpers to do their thing while not disrupting the 'regular' network.
>
>Anyone else have something to contribute to this thread?
>
>73 de Jack
>
>
73, karl

24. Re: [NETSIG:2014] ACL On X1J-4

From: Jtaylor@usacec-osigw.army.mil
Date: Wed, 11 Oct 95 8:37:42 MST
To: netsig@tapr.org
Message-ID: <199510111613.LAA20744@sys1.tapr.org>
Rendered body type: text/plain

Dan, N7MRP brings up an interesting question. What is the purpose in denying users connect
privs off a backbone node? Any thought on this, either pro or con?

73 de Jack

25. Re: ACL On X1J-4 [NETSIG:2014]

From: shawnpat@sierra.net
Date: Wed, 11 Oct 1995 17:30:01 -0700
To: netsig@tapr.org
Message-ID: <199510111728.AA10920@diamond.sierra.net>
Rendered body type: text/plain

Hi Daniel,

First the number 98 is composed of the bit numbers, 64 + 32 + 2, so
(if I have my binary math correct) that is bits 6-5-1. For bits
6-4-2, the bit numbers would be 64+16+4 = 84.
Bits 7 - 6 - 5 - 4 - 3 - 2 - 1 - 0 - no_bit_set
Bit# 128,64, 32, 16, 8, 4, 2, 1,   0.

Since this translation error caused the node to stop Outgoing Level-4
commands instead of Incomming, that is why it wouldn't let you.
For some one who wanted Outgoing L-4 connects stopped but wanted to
be able themselves to do it, I would try the SSID reverse set to 0.
IE:
>ACL Default: 98 Mask: 98
>N7MRP 0
 N7MRP-15 0

Also if (as in the case above) you are setting a default of a high number
then your Mask should not have to be as high as the default, unless
you had an entry that was higher than the default.

The reason you have to use an exact SSID in this case is because you are
setting the default high, which then does not allow the all-SSID bit to
operate on your 0-entry.

73 de Shawn, N7XBM.

```
==========================================>
Dan N7MRP wrote:

>I have since been playing with the ACL command and have noticed some
>things that the manual does not talk about.
>
>I have a backbone TNC that I do not want the users fooling with,  the
>purpose of the TNC is simply to provide L3 gatewaying,  so I thought i'd
>be clever and mess with the ACL command and found that it doesn't work
>quite like it sounds in the manual.  My purpose was to stop any outgoing
>L2 downlinks and anyone attempting to make a L4 downlink if they
>connected to this particular TNC.  However I want to be able to make a
>L2 or L4 downlink for test purposes etc.  Therefore disabling the
>CONNECT command by typing CONNECT - was not an option.  So following the
>instructions,  I enabled the 2nd, 4th and 6th BIT on the ACL * and
>ACL &. The value comes to 98.  I entered for myself N7MRP a value of 0.
>
>The ACL when listed showed:
>
>ACL Default: 98 Mask: 98
>N7MRP 0
>
>Ok,  so now you can "assume" that anyone that connects up to the node
>will not be allowed to make a downlink accept for N7MRP who should be
>able to make a downlink.  Guess what,  WRONG!  I went through several
>attempts monkying with the values and I can not find a way for N7MRP to
>make a downlink.  It keeps on saying,  "sorry can not connect."  However
>when I remove the default and mask restriction it works.  My
>understanding of ACL and what the documentation says, is that a scan is
>made to determined what someone can or can't do and if they have a value
>of 0 and the SSID is matching,  he/she should have full access.  I have
>found this is not the case and I'm curious if anyone else is
>experiencing the same scenario.
>
>I also must state,  that you should ALWAYS include the EXACT SSID when
>entering in yourself as 0 because if you are locking the node down,  you
>won't get back in because the SSID is literal.  So if your connect comes
>in with a -10,  you better have N7MRP-10 or your not going to get in.
>Of course I'm referring to the case when you are coming in through the
>network etc.  I had to enter in the exact SSID of the TNC on the RS-232
>so I could come in the back door, becuase without the SSID it refused to
>work.
>
>Daniel
>Daniel J. Meredith - N7MRP                    Voice: +1-602-489-7384
>P.O. Box 45378                                Fax  : +1-602-912-0426
>Phoenix,  Arizona                             BBS  : +1-602-912-0225
>          85064-5378
>
```

26. Re: [NETSIG:2012] Backbone Routing Protocol (BRP)

```
From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 11 Oct 1995 13:20:24 -0600
To: netsig@tapr.org
Message-ID: <199510111920.NAA22050@acca.nmsu.edu>
Rendered body type: text/plain
```

```
At 09:52 AM 10/9/95 -0500, you wrote:
>A recent discussion about non-AX.25 packet has enticed me to
>upload this.  It's a file I hack on now and then.  While the idea
>isn't complete, and the packet size will grow quite rapidly based
>on the number of hops, it would be usuable for systems of 3 to 5
>hops between gateways.  The idea was to find some way to experiment
>with non-AX.25 packet.  The AMA <-> OKC path is hypothetical, as
>there is no lottery in Oklahoma :-)
>
        All this discussion on "new" packet protocals is like blowing smoke.
You think it's here and it ain't. It blew away. What IS here is the internet
with tcp/ip. The IP router was invented last decade and works fine with Ham
radio!

        I can't understand all the talk about why not use IP. I daily use 2
IP routers that are CAB and #ELP packet radio nodes running the X1j
software. I run JNOS and have set both nodes up as *IP* routers to the other
guys in the areas. I have watched many times a smtp I wrote going to wb9tev
in El Paso via #ELP. The node is busy with bbs and dx-cluster traffic but
the smtp goes thru faster than either other traffic because it's being
switched by the *IP* router in the node.
```

This stuff is FULLY designed and implemented years ago like Rose and
AX.25. So why treat it as news?

27. Re: [NETSIG:2016] Re: Reliability vs. performance.

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Wed, 11 Oct 1995 20:08:20 -0300
To: netsig@tapr.org
Message-ID: <199510112308.UAA21034@bud.peinet.pe.ca>
Rendered body type: text/plain

>> A. change 2 meter channels as necessary to prevent interference to/from
>> adjoining nodes giving clear frequencies and best performance?
>>
>> B. maintain user access on 145.010 and live with the reduced level
>> of interference? Having the old, 145.010, network to fall back on
>> if the UHF system fails is worth the loss of performance.
>>
>
>How about C.
>C. Keep the 145.010 for network backup channel add a second two
>meter user access port... (on 147.??? to reduce self sense
>problems)
>
>>
>-73- AL -----------+-------------------------------------+
>Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
>Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
>--------------------+ internet : al@ia.net -------------+
>

I agree Al, our better node stacks provide 145.01, 147.5xx, and a 441/446
port as well.
The 147 port is the LAN and the 441/446 port(s) are back-bone interconnects.
In some cases 220 is used instead of 441 for increased range.
73 - Ron VE1AIC

28. Re: [NETSIG:2018] Re: ACL On X1J-4

From: mbtindor@cris.com (Michael Tindor)
Date: Thu, 12 Oct 95 01:58:23 EDT
To: netsig@tapr.org
Message-ID: <199510120608.CAA00761@deathstar.cris.com>
Rendered body type: text/plain

On Thu, 12 Oct 1995 00:42:47 -0500 you wrote:

>Dan, N7MRP brings up an interesting question. What is the purpose in denying users connect
>privs off a backbone node? Any thought on this, either pro or con?
>
>73 de Jack
>
>
I'm not sure what you mean Jack? Do you mean, why should one deny a user the privilege of accessing the
backbone and then allowing that user to also connect out the backbone port, i.e.,

at one site we have a 2m/1200 baud port and a 440/9600 port....the 440/9600 is part of backbone. Now,
are you asking why we should not give the user privileges to access the backbone? If so, it is because
at least in our case, I and 2 other guys are the ONLY guys who want to directly access the backbone...we
wan't to control HOW a user accesses a certain place on the other side of the backbone. Perhaps we
only want them to have access to stations on the other end of the backbone via a NETROM node as compared
to letting them get in, connect to another station on teh backbone link via ax25, and then do some
funky connecting inside the backbone further on down the line. This way a sysop can have a little faith
that the only way a user is going to get across the backbone to another place is via thew ay that the
NODEOP thinks is best.....and in most cases this is justified in my opinion.

We have 3 stations on our backbone. Now, 2 are part of the main backbone and one is not...It just sits
on there for us nodeops to access when we feel like it...otherwise, it does not perform as well as the 2
'real' backbone stations and therefore is not depended upon to do any of the tasks related to getting a
packet from one end of a backbone to another. So, we make it so that the users cannot connect out on
the backbone directly but have only the capability to access the nodes on the other side of the backbone
which we set up statically or that are brought in by the dynamic routing (which we rarely use).

If this is not what you were asking, then please explain your question a little more.

Mike

29. Re: [NETSIG:2019] Re: ACL On X1J-4

From: mbtindor@cris.com (Michael Tindor)
Date: Thu, 12 Oct 95 02:05:44 EDT
To: netsig@tapr.org
Message-ID: <199510120615.CAA02336@deathstar.cris.com>
Rendered body type: text/plain

On Thu, 12 Oct 1995 00:45:42 -0500 you wrote:

>Hi Daniel,
>
>First the number 98 is composed of the bit numbers, 64 + 32 + 2, so
>(if I have my binary math correct) that is bits 6-5-1. For bits
>6-4-2, the bit numbers would be 64+16+4 = 84.
>Bits 7 - 6 - 5 - 4 - 3 - 2 - 1 - 0 - no_bit_set
>Bit# 128,64, 32, 16, 8, 4, 2, 1,   0.
>
>Since this translation error caused the node to stop Outgoing Level-4
>commands instead of Incomming, that is why it wouldn't let you.
>For some one who wanted Outgoing L-4 connects stopped but wanted to
>be able themselves to do it, I would try the SSID reverse set to 0.
>IE:
>>ACL Default: 98 Mask: 98
>>N7MRP 0
> N7MRP-15 0
>
>Also if (as in the case above) you are setting a default of a high number
>then your Mask should not have to be as high as the default, unless
>you had an entry that was higher than the default.
>
>The reason you have to use an exact SSID in this case is because you are
>setting the default high, which then does not allow the all-SSID bit to
>operate on your 0-entry.
>
>73 de Shawn, N7XBM.
>

Shawn, I believe you misunderstood something about what Dan was trying to do. (if I didn't misunderstand) Dan wants to prohibit L2 and L4 downlinks but NOT uplinks of any type. So, he wants them to be able to connect TO the TNC but not to connect OUT of the TNC.

30. Re: [NETSIG:2020] Re: Backbone Routing Protocol (BRP)

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 12 Oct 1995 04:18:07 -0500
To: netsig@tapr.org
Message-ID: <199510120929.EAA26097@ns2.icon.net>
Rendered body type: text/plain

>   All this discussion on "new" packet protocals is like blowing smoke.
>You think it's here and it ain't. It blew away. What IS here is the internet
>with tcp/ip. The IP router was invented last decade and works fine with Ham
>radio!

I think you missed my point entirely. The idea doesn't have anything to do with you and your personal network. I too can burn an X-1 PROM, or build a JNOS box. I can easily duplicate what you have done, because it is plug and play. My point was, that I was interested in seeing how the use of a routing method of IP (Strict Route) could be used along with no AX.25 in a link.

Let's take your argument. You are saying then, that the X-1 and JNOS is the end of all packet radio needs. That if all the nodes would just convert over, that we will reach a state of nirvana. That is like saying that if everyone would buy a Kenwood, that their Amateur needs would be met completetly, and there is no need to experiment. Anyone that comes up with another radio or modulation method, is just blowing smoke, and is not serious about their proposal.

Your argument has complete merit. I don't know what I would do if my Amateur Radio hobby completely met all my dreams. I guess I would find another hobby, because I certainly couldn't be challenged further. I think what you may be saying, is that you have reached nirvana with an X-1. But isn't it possible that others may not achieve this state at your same level?

>   This stuff is FULLY designed and implemented years ago like Rose and
>AX.25. So why treat it as news?

I guess I don't understand your statement. If I said IP was "new" anywhere in my posting, I certainly didn't mean to. I'll have to reread the post to find where I made that error.

Steve/n5owk

31. Re: [NETSIG:2018] Re: ACL On X1J-4

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 12 Oct 1995 06:48:18 -0600
To: netsig@tapr.org
Message-ID: <199510121248.GAA13643@acca.nmsu.edu>
Rendered body type: text/plain

At 12:44 AM 10/12/95 -0500, you wrote:
>Dan, N7MRP brings up an interesting question. What is the purpose in
denying users connect
>privs off a backbone node? Any thought on this, either pro or con?
>
>73 de Jack
>
        Jack Dan is running a packet network in Pheonix. There are a lot of packet users. In areas like ours there are no backbones. I and the guys in El Paso put up a 9600 baud link that some wanted to make a backbone. But that says no-one can use the 2 9600 baud nodes to check out if THEIR 9600 baud stuff works. As I write we have Mexico connected to us at 9600 baud. I forward to Montery Mexico.

        But in a big city if a 9600 baud node is open to use the 10's of users would bring it down soon. So I see Dan's problem and understand it.

- karl, k5di <k5di@acca.nmsu.edu> Telephone BBS (505) 526-7177
k5di@k5di.cruces.nm.usa.noam
                        Las Cruces, NM

32. Closed backbones (was Re: ACL On X1J-4)

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 12 Oct 95 08:48:38 EDT
To: netsig@tapr.org
Message-ID: <15021573.1ec8@ram.net>
Rendered body type: text/plain

>From: Jtaylor@usacec-osigw.army.mil
>
>Dan, N7MRP brings up an interesting question. What is the purpose in denyin
>g users connect
>privs off a backbone node? Any thought on this, either pro or con?
>
>73 de Jack

If you have a backbone of any protocol that is tuned for a point to point link (ie 2 stations) if a third untuned station jumps on the channel you will very quickly generate a bottle neck due to lower throughput due to unexpected collisions/retries.

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

33. Re: [NETSIG:2017] Re: ACL on X1J-4

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 12 Oct 1995 07:46:22 -0500
To: netsig@tapr.org
Message-ID: <199510121257.HAA27909@ns2.icon.net>
Rendered body type: text/plain

>>After reading the above, I'm wondering if this can't be a solution to a
>>problem our local network is experiencing. We have new users experimenting
>>with tcpip nodes. They come on for a day or less, then go away for short
>>periods. Each time, they send out either corrupted nodes broadcasts or
>>stale nodes broadcasts.

The obvious solution is to give them a binary that has NO netrom in it. They don't need it. The reason they are getting in to TCP/IP is because it would seem to offer a different protocol than netrom. Why then use TCP/IP wrapped in netrom?? I see this on many of the Oklahoma X-1's. They have their IP routing via netrom. I don't understand it, never will. It's stupid.

>Jack old buddy, you are a prime subject for the wonders of "subnet"
>and other nice things that only a few know how to do.

While there are many practical reasons to subnet, it is not necessary. The local access node (bpq, rose, x-1) should be the route that is default for

the new IP customer. How that access node conducts its routing is immaterial.
Given a north-south route, it should only know what IP's are up north, and
which are down south. What subnets do for you is prepare you for some years
in the future when you will have more than 5 IP users. The best plan would be
a geographic one. In that case, you know that 44.28.1.255 is Dallas, and
44.28.2.255 is Ft Worth, or that 44.28.255.255 is N Texas, 44.77.255.255 is W
Texas, etc. There's 2^15 ways to trip your trigger (the administrator only
gets the last 15 bits)... The way it looks like N Texas went, was to subnet
by frequency, 0.255 was vhf, 1.255 was uhf. I think you can see where this
will fail rather quickly. I would change to population centers. It will
make for less routes in the routers. The ultimate routing scheme was
published in the Digital Conference a few years ago. It introduces a few
more routers into the scheme, which probably aren't needed at this stage.

--
Steve/n5owk

34. Re: [NETSIG:2026] Closed backbones (was Re: ACL On X1J-4)

From: Don Russ <donr@mdsroc.com>
Date: Thu, 12 Oct 1995 16:25:26 -0400
To: netsig@tapr.org
Message-ID: <199510122025.QAA17761@mdsroc.com>
Rendered body type: text/plain

At 11:43 AM 10/12/95 -0500, you wrote:
>>From: Jtaylor@usacec-osigw.army.mil
>>
>>Dan, N7MRP brings up an interesting question. What is the purpose in denyin
>>g users connect
>>privs off a backbone node? Any thought on this, either pro or con?
>>
>>73 de Jack
>
>If you have a backbone of any protocol that is tuned for a point to
>point link (ie 2 stations) if a third untuned station jumps on the channel
>you will very quickly generate a bottle neck due to lower throughput due
>to unexpected collisions/retries.
>
>_____________________________________
>Thomas A. Moulton, W2VY   RAM Mobile Data
>w2vy@ram.net   (908) 602-5227
>
 AMEN!

I work within the North East Digital Association (N.E.D.A) network and we
have been using H.T.S. free backbones for over five years. We restrict
access when it is necessary to stop uninformed users from clobbering the
network and nodes lists. Trust me. They will find the frequencies and try
to use them. We have been very proud of having > 80% connectivity to
anything on the nodes list. The way we deal with the uninformed is to
inform them and if they still think they know better than we do we lock them
out or gateway them.

I have talked myself blue in the face to convince people that H.T.S. and
three ways slow things down greatly but the best way is to listen to a
crashed link and learn. When you can connect from Main to Buffalo without
leaving the backbone and without a collision you will know what it's like.
The secret to success in packet networking is standards and sticking to them.

Don Russ   Microwave Data Systems, Rochester, NY
Advanced Development Engineer   a California Microwave Co.
N2CZL@WB2PSI.wny.ny.usa.na   donr@mdsroc.com

35. ROSE Switch version 3.7 now available

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 12 Oct 95 18:40:30 EDT
To: rose@overleaf.com (ROSE List), netsig@tapr.org
Message-ID: <15021573.1ed5@ram.net>
Rendered body type: text/plain

This message describes the features in the ROSE Switch from
Version 3.3 (3/93 to the present.

ROSE Switch now supports UI frames exactly like I frames.

That is if the UNproto specifies a switch callsign and Network
address the UI frame will be passed through the network and
sent out as a UI at the other end.

This can be used for Mail_For beacons or TCP/IP.

The largest MTU that has been tested with success is 500.

I am looking into exactly why larger MTU don't work.

The max paclen is still 256. The problem comes about when a
datagrame is fragmented into more than two parts.

Support for 64k EPROM which has USERS, HEARD, CONFIG and INFO in EPROM.

This greatly reduces the day to day maintance of the switches.

Applications have a prompt to redisplay or B for disconnect.
The application will disconnect after all the data is delivered.

Applications now accept any SSID (USERS-0 .. USERS-15) so that you
can connect to more than one instance of the application at different
network points.

The Frack, Resptime and Check are measured in 0.1 Seconds.

Password on LOADER and CONFIG.

Added ability to manually Block a trunk between two switched.

The file RZSW37.ZIP can be found on lantz.com in the rose directory and
on tapr.org in the tapr/software_lib/switch directory. The latest docs
are RSWD33.ZIP in the same directories. (Yes the docs need to be updated
but much of it has not changed much.)

If you have questions you can send them to me directly, or to the ROSE
mailing list (rose@overleaf.com) add yourself via listserve@overleaf.com.

Also look for NETMGR on lantz.com in rats/netmgr which can be used to
generate the ROSE configuration files with a GUI to do network design.

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

36. Re: [NETSIG:2023] Re: ACL On X1J-4

From: shawnpat@sierra.net
Date: Fri, 13 Oct 1995 01:09:31 -0700
To: netsig@tapr.org
Message-ID: <199510130107.AA11819@diamond.sierra.net>
Rendered body type: text/plain

>Shawn, I believe you misunderstood something about what Dan was trying to do. (if I didn't
misunderstand) Dan wants to prohibit L2 and L4 downlinks but NOT uplinks of any type. So, he wants
them to be able to connect TO the TNC but not to connect OUT of the TNC.
>

True. That's what I get for trying to answer before my 12th cup of
coffee. Any way, I think I answered the question through the back
door.

Thinking a bit more about it, the ACL bit for all-SSID could be turned
on for the Nodeop call, and that should also take care of having to
specify the SSID in the list. So then the node would see
N7MRP = ACL of 0 + all-SSID.

HTH
73 de Shawn, N7XBM.

37. Re: [NETSIG:2018] Re: ACL On X1J-4

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Thu, 12 Oct 1995 22:11:53 -0300
To: netsig@tapr.org
Message-ID: <199510130111.WAA10691@bud.peinet.pe.ca>
Rendered body type: text/plain

>Dan, N7MRP brings up an interesting question. What is the purpose in
denying users connect
>privs off a backbone node? Any thought on this, either pro or con?
>
>73 de Jack

>
Just to state the obvious, a back-bone node is for point-to-point
connections in a no-hidden-transmitter system. Usually these nodes are on
UHF and have directional antennas which makes it even more likely that a
User connect to one node might be a hidden-transmitter to other nodes on the
system.
73 - Ron VE1AIC

38. Re: [NETSIG:2020] Re: Backbone Routing Protocol (BRP)

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Thu, 12 Oct 1995 22:11:55 -0300
To: netsig@tapr.org
Message-ID: <199510130111.WAA10701@bud.peinet.pe.ca>
Rendered body type: text/plain

>   I can't understand all the talk about why not use IP. I daily use 2
>IP routers that are CAB and #ELP packet radio nodes running the X1j
>software. I run JNOS and have set both nodes up as *IP* routers to the other
>guys in the areas. I have watched many times a smtp I wrote going to wb9tev
>in El Paso via #ELP. The node is busy with bbs and dx-cluster traffic but
>the smtp goes thru faster than either other traffic because it's being
>switched by the *IP* router in the node.
>
>   This stuff is FULLY designed and implemented years ago like Rose and
>AX.25. So why treat it as news?
>

Thats a subject that sure could use some more exposure. There seems to very
little documentation on the setup and usage of the IP router in X1J.
We could no doubt use a how-to and why-for notes on this function.
73 - Ron VE1AIC

39. ACL Discussion

From: WBRADFORD@delphi.com
Date: Thu, 12 Oct 1995 21:14:05 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <01HWD80ZY0IA938ZFH@delphi.com>
Rendered body type: text/plain

The recent and on-going discussion   ACL on X1J-4   is excellent!

Netsig was made for This kind of stuff... Thanks to you guys for the
excellent information.

73 Bill   k7ea@wb7ulh.ut   bradfowr@kutv.groupw.wec.com
          Salt Lake City

40. Re: [NETSIG:2026] Closed backbones (was Re: ACL On X1J-4)

From: Ed Southall WD0ELL <ecs@sullivan.hwy66.com>
Date: Fri, 13 Oct 1995 16:37:10 -0500
To: netsig@tapr.org
Message-ID: <9510132141.AA26112@sullivan>
Rendered body type: text/plain

At 11:43 AM 10/12/95 -0500, you wrote:
>>From: Jtaylor@usacec-osigw.army.mil
>>
>>Dan, N7MRP brings up an interesting question. What is the purpose in denyin
>>g users connect
>>privs off a backbone node? Any thought on this, either pro or con?
>>
>>73 de Jack
>
>If you have a backbone of any protocol that is tuned for a point to
>point link (ie 2 stations) if a third untuned station jumps on the channel
>you will very quickly generate a bottle neck due to lower throughput due
>to unexpected collisions/retries.
>
>_____________________________________
>Thomas A. Moulton, W2VY   RAM Mobile Data
>w2vy@ram.net   (908) 602-5227
>

     After following this discussion thread for awhile, I've decided to
throw in my 2 bits.
     I see a need for a clarification of terminology here regarding
'connections', 'uplinks', and 'downlinks'. My understanding is that
'connection' best refers to a circuit between peer level entities - AX25

(L2) station to station, netrom (L3) node to node, etc.); 'uplink' and
'downlink' referring to a circuit that steps 'up' or 'down' a level - AX25
(L2) user to a netrom (L3) node or vice versa, for example. Based on that
terminology, is it not universally agreed that user 'connections' to a
backbone node are undesirable, as Tom W2VY says?
      It seems to me that the real point for discussion is the advisability
of permitting users to 'downlink' onto the backbone frequency. I see
reasonably arguments on both sides of that question. But connections (NOS
netrom direct to backbone nodes, etc.) and uplinks (e.g. AX25 9600 bps
experimenters to backbone) sound like bad news to me.
73 - Ed

      +---+
      | Edward C. Southall   New Haven MO USA |
      | Internet: ecs@hwy66.com   AmPRnet: wd0ell@wd0ell.ampr.org |
      | wd0ell@amsat.org   AX.25: wd0ell@wb0qgr.mo.usa.noam |
      +---+

41. X1J2 Node_IP_how_to.

From: shawnpat@sierra.net
Date: Sat, 14 Oct 1995 02:04:15 -0700
To: netsig@tapr.org
Message-ID: <199510140202.AA10280@diamond.sierra.net>
Rendered body type: text/plain

>Thats a subject that sure could use some more exposure. There seems to very
>little documentation on the setup and usage of the IP router in X1J.
>We could no doubt use a how-to and why-for notes on this function.
>73 - Ron VE1AIC
>

I'll let some one else take the *why-for* as I am semi-neutral on TCP/IP.
As for *how-to*, I hope this gives you enough information.
This is X1J2 setup which should apply to X1J4, but I still haven't
gotten my 4 setup going, between my cups of coffee and such.

IP Address (Internet Protocall address) is the numerical-hieratrical(sp?)
system used on the Internet. The 44.xx.xx.xx group of addresses are
assigned exclusively for amateur radio use. This was done in
recognition of the amateur community and it's need for proper
interface with the Internet. On the Internet each address is also
assigned a Domain Name (ie: tapr.org or algedi.ampr.org), which are
kept in Master and Sub data bases. On the amateur radio side, the
Domain Name is the callsign-SSID of each node or station (except for
the Internet Gateways which use the IP Domain Name and have an
alias=callsign=Domain_name=IPaddress setup). Each group of numbers
in the address is called an *octet* (in 44.131.24.240, *44* is the
first octet).

The different amateur addresses are subdivided by the second octet
(44.78.xx.xx = Oklahoma) into areas of the USA and the World.
Each area has a volunteer coordinator who assigns the specific
addresses as requested (and available).

The Summer 1994 PSR #55 has a list of amateur coordinators.

I don't know how it is done else where, but this is the IP setup
that I have for the Elko ARC nodes:
Notes: This is X1J2 setup, X1J4 has other commands that relate to
       the auto IP router. Other IP params are left at default.
       Comments are in brackets {}.

ipadd
ELKO:WA7BWF-1} My IP address : 44.125.131.129
{each node has a unique address, assigned by your area IP coordinator.}
{Some Nodeops have devised a way to have a whole stack use a single
 address. I'm not sure how that works.}

ipbro
ELKO:WA7BWF-1} Broadcast IP address : 44.125.255.255 {default test address}
{Not used with X1J2, but should be a part of X1J4 auto-routing/broadcast}

arp   {Defigns the direct neighbors similar to AX25 Routes}
ELKO:WA7BWF-1}
Destination   P hw-type Callsign   Mode Timer
44.125.131.132   P AX.25   N7XBM-1   VC   {VC = Virtual Circuit}

```
44.125.131.1      P AX.25   N7WVZ       DG  {This is an MSYS BBS}
44.125.131.3      P AX.25   N7XBM-13    DG          {DG = Data Gram}
44.125.131.4      P AX.25   N7XBM-14    DG    {DG is for true IP-stations}
44.125.131.130    P AX.25   WB7BSP-1    VC    {VC is for pseudo-routers ie:
44.125.131.131    P AX.25   WA7BWF-3    VC       x1j nodes. P=publish}
{HW-type = AX.25 or NetRom protocall}

iproutes  {Defigns the node/user path to take to get there from here}
ELKO:WA7BWF-1}
Destination      Len  I/F     Gateway           Metric
44.125.131.132    32  Port 0  {Length 32 specifies a 4 octet address}
44.125.131.130    32  Port 0  {So this is a direct neighbor node or user}
44.125.131.3      32  Port 0  {Port 0 is radio, port 1 is RS-232}
44.125.131.4      32  Port 0  {See ARP table above for node/user callsign}
44.125.131.131    32  Port 0
44.125.131.1      32  Port 0  44.125.131.1  {Had to force gate for MSYS}
44.125.130.0      24  Port 0  44.125.131.132 {Gateway is next node/user
44.12.2.0         24  Port 0  44.125.131.130    on path to destination}
44.12.0.0         24  Port 0  44.125.131.132 {Lenth 24=all address starting
44.125.0.0        16  Port 0  44.125.131.131    with first 3 octets}
44.12.0.0         16  Port 0  44.125.131.132 {Len 16=first 2 octets}
44.0.0.0          8   Port 0  44.125.131.131 {Last entry =those not covered
                                                in the above entries}

The list is top down, so if an entry isn't covered by a specific len=32
entry then the next entry is scanned, until a match is found.
So a connect request for 44.125.130.55 would cause a link to be created
to the gateway 44.125.131.132 (N7XBM-1 node) and the request would be
transferred down the line.  44.12.xx.xx is in Idaho, so the next-best
path to Idaho is either 44.125.131.131 (WB7BSP-1 node) or 44.125.131.132
(N7XBM-1 node) depending upon the rest of the address requested.
Below is the Lander node listing so you can see the inter-relation
between the listings.

ipaddress
LANDER:WA7BWF-3} My IP address : 44.125.131.131
ipbroadcast
LANDER:WA7BWF-3} Broadcast IP address : 44.125.255.255
arp
LANDER:WA7BWF-3}
Destination       P hw-type Callsign   Mode  Timer
44.125.131.129    P AX.25   WA7BWF-1    VC          {The Elko node above}
44.125.131.128    P AX.25   N7XBM-2     VC          {The Lion node (West)}
ip
LANDER:WA7BWF-3}
Destination      Len  I/F     Gateway           Metric
44.125.131.128    32  Port 0
44.125.131.129    32  Port 0
44.125.131.130    32  Port 0  44.125.131.129    {
44.125.131.132    32  Port 0  44.125.131.129    {All addresses east-Elko}
44.125.131.0      24  Port 0  44.125.131.129    {
44.125.0.0        16  Port 0  44.125.131.128    {All addresses west-Lion}
44.12.0.0         16  Port 0  44.125.131.129    {Idaho address east/north}
44.0.0.0          8   Port 0  44.125.131.128    {The rest go west}

One tip is to try to get the addresses in a sequential_directional order,
when you coordinate them, as it makes the ARP and IProutes setup easier
to accomplish and debug.

The *Ping* command in Jnos (also MSYS) is an easy way to test the
IP-route and see if it works.  If it does, then you will get a time
(in seconds, or is it hundreths of seconds) back as a response.
Just ping the destination address (node or station).

As I said above, this is how I did it.  I consulted with N8KHN Bill, who
is the Nevada IP coordinator and a Gateway operator, and after some hair
pulling and testing, it worked.  Your milage may vary.
There may be other minor changes that improve performance.  If so I hope
some one will post them here.

HTH,
73 de Shawn, N7XBM.
```

42. Re: [NETSIG:2032] Re: Backbone Routing Protocol (BRP)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sat, 14 Oct 1995 06:31:39 -0600
To: netsig@tapr.org
Message-ID: <199510141231.GAA19493@acca.nmsu.edu>

Rendered body type: text/plain

At 09:47 AM 10/13/95 -0500, you wrote:
>>   I can't understand all the talk about why not use IP. I daily use 2
>>IP routers that are CAB and #ELP packet radio nodes running the X1j
>>software. I run JNOS and have set both nodes up as *IP* routers to the other
>>guys in the areas. I have watched many times a smtp I wrote going to wb9tev
>>in El Paso via #ELP. The node is busy with bbs and dx-cluster traffic but
>>the smtp goes thru faster than either other traffic because it's being
>>switched by the *IP* router in the node.
>>
>>   This stuff is FULLY designed and implemented years ago like Rose and
>>AX.25. So why treat it as news?
>>
>
>Thats a subject that sure could use some more exposure. There seems to very
>little documentation on the setup and usage of the IP router in X1J.
>We could no doubt use a how-to and why-for notes on this function.
>73 - Ron VE1AIC

        Hi Ron, the x1j4 software is on a 512k E-prom in a tnc-2 that has
bank switching to access all that data. It is a TheNet version 1.0 with the
addition of a IP router and in version 4, a dynamic arp table. The problem
is that not many hams understand subnet principles and the finer points in
network management.

        So it always seems odd to me to see guys putting up x1j nodes and
doing so with no intent to use the IP router. I think the other features of
the node may make it good to use but why not also use it for the tcp/ip
hams? I put up the nodes FOR the guys using NOS as I do. I must admit there
are few that enjoy NOS, and more bbs traffic flows than tcp/ip.

        It was funny a few months ago. I was having trouble understanding a
bit-wise subnet. I fought it awhile and then went to our new internet
sysops. They kind of looked away and said yes they had HEARD about this in a
class they took a month ago. So we looked in the class notes and the last
subject of the course was subneting. Since a person taking this course had
to be at least a EE, it was funny to see my problem layed out just like I
did it but with some insight I lacked.

        There were lines that look like:

                10100010 00000011 1001/0000 to 1001/1111 is your subnet. And
your netmask is the inverse of that.

        Anyhow it is deep stuff. It requires you to be happy with 3 number
bases. A lot of people have trouble with that.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

43. Re: Closed backbones

From: shawnpat@sierra.net
Date: Fri, 13 Oct 1995 17:32:52 -0700
To: netsig@tapr.org
Message-ID: <199510131730.AA09620@diamond.sierra.net>
Rendered body type: text/plain

>The secret to success in packet networking is standards and sticking to them.
>
>Don Russ   Microwave Data Systems, Rochester, NY
>Advanced Development Engineer   a California Microwave Co.
>N2CZL@WB2PSI.wny.ny.usa.na   donr@mdsroc.com
>

Don,

Would it be possible to publish the standards on this forum, or
reference a web site where they may be found? FTP or HTTP would
do for me, and I could resend to any who ask.

de Shawn, N7XBM.

44. Re: [NETSIG:2035] X1J2 Node_IP_how_to.

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sat, 14 Oct 1995 22:52:19 -0300
To: netsig@tapr.org
Message-ID: <199510150152.WAA01516@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>I'll let some one else take the *why-for* as I am semi-neutral on TCP/IP.
>As for *how-to*, I hope this gives you enough information.
>This is X1J2 setup which should apply to X1J4, but I still haven't
>gotten my 4 setup going, between my cups of coffee and such.
>
<snip>
>
>As I said above, this is how I did it. I consulted with N8KHN Bill, who
>is the Nevada IP coordinator and a Gateway operator, and after some hair
>pulling and testing, it worked. Your milage may vary.
>There may be other minor changes that improve performance. If so I hope
>some one will post them here.
>
>HTH,
>73 de Shawn, N7XBM.
>
Thanks very much for the detailed report..now I'll get my cup of coffee and
study it,
comparing with notes in the NEDA manuals. Now this is the kinda stuff that makes
NETSIG fun!
73 - Ron
VE1AIC

45. Re: [NETSIG:2035] X1J2 Node_IP_how_to.

From: David Lapp <lapp@waterloo.hp.com>
Date: Sat, 14 Oct 1995 23:52:55 -0500 (EDT)
To: netsig@tapr.org
Cc: lapp@waterloo.hp.com (David Lapp)
Message-ID: <199510150352.AA175039175@hppadan.waterloo.hp.com>
Rendered body type: text/plain

>
> I'll let some one else take the *why-for* as I am semi-neutral on TCP/IP.
> As for *how-to*, I hope this gives you enough information.
> This is X1J2 setup which should apply to X1J4, but I still haven't
> gotten my 4 setup going, between my cups of coffee and such.
>
>
> IP Address (Internet Protocall address) is the numerical-hieratrical(sp?)
> system used on the Internet. The 44.xx.xx.xx group of addresses are
> assigned exclusively for amateur radio use. This was done in
> recognition of the amateur community and it's need for proper
> interface with the Internet. On the Internet each address is also
> assigned a Domain Name (ie: tapr.org or algedi.ampr.org), which are
> kept in Master and Sub data bases. On the amateur radio side, the
> Domain Name is the callsign-SSID of each node or station (except for

Perhaps I'm misinterpreting this but yourcallsign-SSID isn't your
domain name. The callsign-SSID defines a node's address on a
particular network and is thus more like a link level or media
address. On typical wire networks this corresponds to a 48 bit
IEEE MAC address (e.g. an ethernet address). Callsigns are often
used as parts of domain names tho.

Dave Lapp
VE3LHO

46. Re: [NETSIG:2021] Re: Reliability vs. performance.

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Sun, 15 Oct 1995 16:14:44 -0700 (MDT)
To: netsig@tapr.org
Message-ID: <m0t4bKQ-0002dvC@mtewe.kevin.mt.us>
Rendered body type: text/plain

> >How about C.
> >C. Keep the 145.010 for network backup channel add a second two
> >meter user access port... (on 147.??? to reduce self sense
> >problems)
> >
> >>
> >-73- AL -----------+-------------------------------------+
> >Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
> >Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
>
> I agree Al, our better node stacks provide 145.01, 147.5xx, and a 441/446
> port as well.
> The 147 port is the LAN and the 441/446 port(s) are back-bone interconnects.
> In some cases 220 is used instead of 441 for increased range.

> 73 - Ron VE1AIC
>

That's amazing. That's exactly what we've done with the local node
here. (Mt Royal in the Sweet Grass Hills.)   It has 145.010 (SWT),
147.550 (SWTLAN) and 441/446 (#SWT4) for access to the backbone running
south. Despite a little desense between SWT and SWTLAN from having
no duplexer and antennas far too close - it works great.

My suggestion here to folks is that they first add a UHF path to
take the load node-to-node load off of 145.010. Then, after the
user traffic on 01 gets back to the cricital point and the bank account
has had a chance to recover, I suggest they add an addition node
for user access.

It sounds like others have found this a reasonable system. What are the
thoughts about which should come first? The UHF or the Local Access node?

73 - Bill

47. Re: K2LSX: X1J2 Node_IP_how_to.

From: shawnpat@sierra.net
Date: Mon, 16 Oct 1995 03:21:09 -0700
To: netsig@tapr.org
Message-ID: <199510160319.AA23588@diamond.sierra.net>
Rendered body type: text/plain

K2LSX queries:

```
>> arp    {Defigns the direct neighbors similar to AX25 Routes}
>> ELKO:WA7BWF-1}
>> Destination       P hw-type Callsign   Mode  Timer
>> 44.125.131.1      P AX.25   N7WVZ       DG  {This is an MSYS BBS}
>
```

> Exactly what does the " P " do ?

   This is a *publish* (or not) switch, such that when a user connects
   to the node and issues a "arp 44.125.131.1" then the Publish is checked
   for that address and if found *on* then the node responds with the
   arp entry (with callsign) for that address (destination), very similar
   to my example above.

> Below, I specify a gateway even though it is the same as the destination.
> I didn't think it would work without a gateway specified. As I thought
> someone told me they tried this and it didn't work.

   Not sure if there was a part of your response that is missing or what
   exactly the question here is. If you refer to the 44.125.131.1 entries
   then here is what worked (finally). N7WVZ station is a MSYS BBS
   (which also has some IP functions built in) with a software node as it's
   interface to packet (kiss type). I am not sure why, but I played with
   the ARP/IPRoute tables and stumbled on having to add the same address
   as it's own gateway in order for it to work. I was using the *ping*
   command (JNOS, WNOS, etc) from the MSYS to test and this is what worked.
   I really do not know why, but suspect that it has something to do with
   the software node in MSYS. Or possibly because only the MSYS-node was
   broadcasting routes (N7WVZ-1) and not the BBS it self, though I did try
   placing the node-call in the ARP first. Any one else know?

```
>> iproutes  {Defigns the node/user path to take to get there from here}
>> ELKO:WA7BWF-1}
>> Destination      Len  I/F     Gateway           Metric
>> 44.125.131.131    32  Port 0         {Normal direct Node/User entry}
>> 44.125.131.1      32  Port 0  44.125.131.1  {Had to force gate for MSYS}


>+--------------------------------+-----------------------------------------+
>| John T. Gubernard, K2LSX       |Windows isn't a virus, viruses do something|
>| Internet: jtg@intac.com        |                   LINUX                 |
>| Amprnet : k2lsx@k2lsx.ampr.org |   is an Operating System that does a lot  |
>| AX25 BBS: k2lsx@k2bjg.NJ.USA.NA|                                         |
>+--------------------------------+-----------------------------------------+
>
```

73 de Shawn, N7XBM.

48. Re: [NETSIG:2034] Re: Closed backbones (was Re: ACL On X1J-4)

From: "Tom Moulton" <tmoulton@ram.net>
Date: Mon, 16 Oct 95 06:32:43 EDT
To: netsig@tapr.org
Message-ID: <15021573.1ef7@ram.net>
Rendered body type: text/plain

>From: Ed Southall WD0ELL <ecs@sullivan.hwy66.com>

>> Tmoulton@ram.net
>>
>>If you have a backbone of any protocol that is tuned for a point to
>>point link (ie 2 stations) if a third untuned station jumps on the channel
>>you will very quickly generate a bottle neck due to lower throughput due
>>to unexpected collisions/retries.
>>
>
>   After following this discussion thread for awhile, I've decided to
>throw in my 2 bits.
>   I see a need for a clarification of terminology here regarding
>'connections', 'uplinks', and 'downlinks'. My understanding is that
>'connection' best refers to a circuit between peer level entities - AX25
>(L2) station to station, netrom (L3) node to node, etc.); 'uplink' and
>'downlink' referring to a circuit that steps 'up' or 'down' a level - AX25
>(L2) user to a netrom (L3) node or vice versa, for example. Based on that
>terminology, is it not universally agreed that user 'connections' to a
>backbone node are undesirable, as Tom W2VY says?

I guess the uplink and downlink are netrom terms that I don't use. My point
is that you may not want to allow for any other RF EMITTERS on a channel
than the Network facilites that have been designed to be there. I don't
care if they are Uplink, downlink or peer to peer. If the network designer
didn't put them there then it is likely that any additional traffic is
hurting the overall system even though it may seem to work to the person
who put the new switc/node/bbs/tnc on the channel.

Don't get me wrong some networks may not have enough backbone traffic to
care,

>   It seems to me that the real point for discussion is the advisability
>of permitting users to 'downlink' onto the backbone frequency. I see
>reasonably arguments on both sides of that question. But connections (NOS
>netrom direct to backbone nodes, etc.) and uplinks (e.g. AX25 9600 bps
>experimenters to backbone) sound like bad news to me.
>73 - Ed
>

Unless I have missed something an UPlink and Downlink only differ in which
station initiated the connection (ie sent the SABM)

_____
Thomas A. Moulton, W2VY   RAM Mobile Data
w2vy@ram.net   (908) 602-5227

49. Re: [NETSIG:2035] X1J2 Node_IP_how_to.

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 16 Oct 1995 06:59:18 -0600
To: netsig@tapr.org
Message-ID: <199510161259.GAA12407@acca.nmsu.edu>
Rendered body type: text/plain

At 11:10 AM 10/14/95 -0500, you wrote:

>I'll let some one else take the *why-for* as I am semi-neutral on TCP/IP.
>As for *how-to*, I hope this gives you enough information.
>This is X1J2 setup which should apply to X1J4, but I still haven't
>gotten my 4 setup going, between my cups of coffee and such.

       Shawn, the IP routes will stay the same with x1j4 but if you hold
your mouth right it has a *automatic* arp update. That should make things
easier for new users to join in the network.

>
>
>
>I don't know how it is done else where, but this is the IP setup
>that I have for the Elko ARC nodes:
>Notes: This is X1J2 setup, X1J4 has other commands that relate to
>   the auto IP router. Other IP params are left at default.
>   Comments are in brackets {}.
>

```
>ipadd
>ELKO:WA7BWF-1} My IP address : 44.125.131.129
>{each node has a unique address, assigned by your area IP coordinator.}
>{Some Nodeops have devised a way to have a whole stack use a single
> address.  I'm not sure how that works.}

        I don't think it does. As it is the node is a sudo router and should
have 3 ports. It doesn't and that leads to hair pulling. I think every node
has to have it's own ip number so that ip can drive through them...

>
>ipbro
>ELKO:WA7BWF-1} Broadcast IP address : 44.125.255.255 {default test address}
>{Not used with X1J2, but should be a part of X1J4 auto-routing/broadcast}
>
>arp    {Defigns the direct neighbors similar to AX25 Routes}
>ELKO:WA7BWF-1}
>Destination       P hw-type Callsign   Mode  Timer
>44.125.131.132    P AX.25   N7XBM-1     VC          {VC = Virtual Circuit}
>44.125.131.1      P AX.25   N7WVZ       DG  {This is an MSYS BBS}
>44.125.131.3      P AX.25   N7XBM-13    DG          {DG = Data Gram}
>44.125.131.4      P AX.25   N7XBM-14    DG    {DG is for true IP-stations}
>44.125.131.130    P AX.25   WB7BSP-1    VC    {VC is for pseudo-routers ie:
>44.125.131.131    P AX.25   WA7BWF-3    VC       x1j nodes. P=publish}
>{HW-type = AX.25 or NetRom protocall}


        We use nothing but Data Gram. I have never figured out why I wanted
Virtual Circuit. Hope to learn some time...


>
>iproutes  {Defigns the node/user path to take to get there from here}
>ELKO:WA7BWF-1}
>Destination      Len  I/F     Gateway           Metric
>44.125.131.132    32  Port 0  {Length 32 specifies a 4 octet address}
>44.125.131.130    32  Port 0  {So this is a direct neighbor node or user}
>44.125.131.3      32  Port 0  {Port 0 is radio, port 1 is RS-232}
>44.125.131.4      32  Port 0  {See ARP table above for node/user callsign}
>44.125.131.131    32  Port 0
>44.125.131.1      32  Port 0  44.125.131.1  {Had to force gate for MSYS}
>44.125.130.0      24  Port 0  44.125.131.132 {Gateway is next node/user
>44.12.2.0         24  Port 0  44.125.131.130    on path to destination}
>44.12.0.0         24  Port 0  44.125.131.132 {Lenth 24=all address starting
>44.125.0.0        16  Port 0  44.125.131.131    with first 3 octets}
>44.12.0.0         16  Port 0  44.125.131.132 {Len 16=first 2 octets}
>44.0.0.0          8   Port 0  44.125.131.131 {Last entry =those not covered
>                                               in the above entries}
>

        This route table looks great! Sorry you had a MSYS to deal with.
They are even worse!



>As I said above, this is how I did it.  I consulted with N8KHN Bill, who
>is the Nevada IP coordinator and a Gateway operator, and after some hair
>pulling and testing, it worked.  Your milage may vary.
>There may be other minor changes that improve performance.  If so I hope
>some one will post them here.
>
>HTH,
>73 de Shawn, N7XBM.
>
>
        Shawn this is the best I have seen. You are somehow involved with
the internet networking or you would not have gone this far. I hope this
will help others as much as it has helped me.

        I have this and the other postings on x1j in word for windows. It is
simple to clip board between a message in Eudora and the editor. Soon I plan
to post a message here that is a compilation of all the new information.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->
```

50. Re: [NETSIG:2037] Re: Closed backbones

From: Don Russ <donr@mdsroc.com>
Date: Mon, 16 Oct 1995 09:34:45 -0400

To: netsig@tapr.org
Message-ID: <199510161334.JAA24331@mdsroc.com>
Rendered body type: text/plain

At 11:15 AM 10/14/95 -0500, you wrote:
>>The secret to success in packet networking is standards and sticking to them.
>>
>>Don Russ   Microwave Data Systems, Rochester, NY
>>Advanced Development Engineer   a California Microwave Co.
>>N2CZL@WB2PSI.wny.ny.usa.na   donr@mdsroc.com
>>
>
>Don,
>
>Would it be possible to publish the standards on this forum, or
>reference a web site where they may be found? FTP or HTTP would
>do for me, and I could resend to any who ask.
>
>de Shawn, N7XBM.
>

Wow! I have been looking for some sort of subject to start a net page with
and you have given me one! It will take a long time though....

The standards are burried within the 174 page NEDA annual. The annual has a
LOT of stuff about networking in general and also contains sysop node
maintainance instructions etc. The "standards" are on several pages and
I'll try to get the source document sent to me. This will take some
time.....   The NEDA orginization is floundering now after being in
existance for 5 years. Most of the principals are off in other directions.
I will try to contact the person currently holding the annual's source and
try to get a copy I can cut up and distribute electronically.

If you want the entire document NEDA Associate membership is $15.00.

Send your Name, address, home phone, packet bbs, TCP/IP address, email
address, and my name as a contact.

Send a check for $15 made out to NEDA.

The address is:
 NEDA
 PO box 563
 Manchester, NH 03105

No promises as to how long it will be to get this going. I am a full time
design engineer, do some consulting, attending a masters MSEE program, etc.

I will be listening though.

Don Russ   Microwave Data Systems, Rochester, NY
Advanced Development Engineer   a California Microwave Co.
N2CZL@WB2PSI.wny.ny.usa.na   donr@mdsroc.com

51. TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Mon, 16 Oct 1995 14:34:40 -0500
To: netsig@tapr.org
Message-ID: <199510161934.OAA16704@mercury.texoma.com>
Rendered body type: text/plain

Recently a fellow BBS SYSOP here in Texas felt he needed to switch over from
AA4RE to F6FBB software in order to take advantage of message compression
for forwarding purposes. This, despite the fact that he was much more
comfortable with AA4RE, having used it for years.

This reminded me of some discussion of TNC-based data compression, much like
the landline modems currently incorporate.

Is anyone currently working on this idea? If not, WHY NOT?

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

I was gratified to be able to answer promptly. I said I didn't know..

52. Re: [NETSIG:2026] Closed backbones (was Re: ACL On X1J-4)

From: ferracci@imaginet.fr (Laurent Ferracci - F1JKJ)
Date: Tue, 17 Oct 1995 09:46:18 GMT
To: netsig@tapr.org
Message-ID: <199510171045.LAA02030@icaria.imaginet.fr>
Rendered body type: text/plain

On Thu, 12 Oct 1995 11:44:11 -0500, you wrote:

>If you have a backbone of any protocol that is tuned for a point to
>point link (ie 2 stations) if a third untuned station jumps on the channel
>you will very quickly generate a bottle neck due to lower throughput due
>to unexpected collisions/retries.

Provided you're using good old CSMA...
DAMA avoids collisions. Hidden transmitters do not exist any more.

That way, you can even have 3 stations working semi-duplex.

>From Laurent FERRACCI, F1JKJ -- PGP Email welcome
   > ferracci@imaginet.fr <   Public Key on mail servers

                I am _NOT_ using Windows95 !!! -

53. NETROM On JNOS

From: djm@phx-az.com (Daniel Meredith)
Date: Tue, 17 Oct 1995 03:57:00 GMT
To: netsig@tapr.org
Message-ID: <95101700061451@phx-az.com>
Rendered body type: text/plain

Hi All,
        I'm looking to hear from anyone that has NETROM running
efficiently and succesfully on a JNOS box. I am running it as a Gateway
machine and I am yet to get the NETROM working efficiently and properly
mixing with the backbone. If someone out there feels they have it
right, would you mind sharing your tips? Don't get me wrong here, I
have it working, but it seems to bottleneck and get weird at times.
Also, I have noticed a weird effect on both AX.25 and NETROM
connections, it will often repeat a frame even after it has been
decoded to the receiving end screen and acked, but it just repeats the
frame and the new frames follow. Anyone know the fixes??? It's a bit
annoying since it happens often....

Daniel

-----   \---------------/   -----
                    Arizona Network Intertie Group
                "Serving Az's Digital Needs Since 1993"

Daniel J. Meredith - N7MRP   Voice: +1-602-489-7384
P.O. Box 45378   Fax : +1-602-912-0426
Phoenix, Arizona   BBS : +1-602-912-0225
          85064-5378

List Owner: F6fbb-List@Phx-Az.Com
Arizona Amateur Radio VHF/UHF Digital Coordinator

---
 * OLXWin 1.00 * Bakersfield: California's Hot Spot!

54. Re: [NETSIG:2046] Re: Closed backbones (was Re: ACL On X1J-4)

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 17 Oct 1995 14:09:01 -0500
To: netsig@tapr.org
Message-ID: <199510171936.OAA25442@ns2.icon.net>
Rendered body type: text/plain

>On Thu, 12 Oct 1995 11:44:11 -0500, you wrote:
>
>>If you have a backbone of any protocol that is tuned for a point to
>>point link (ie 2 stations) if a third untuned station jumps on the channel
>>you will very quickly generate a bottle neck due to lower throughput due
>>to unexpected collisions/retries.
>
>Provided you're using good old CSMA...
>DAMA avoids collisions. Hidden transmitters do not exist any more.

>
>That way, you can even have 3 stations working semi-duplex.

Sounds great. Where did you get your DAMA ROM, does it work with a
TNC-2? Please upload the software (ROM code, Source, etc) and tell
us where to download it! It sounds like your running this software,
tell us more.

55. Re: [NETSIG:2047] NETROM On JNOS

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 17 Oct 1995 14:14:58 -0500
To: netsig@tapr.org
Message-ID: <199510171942.OAA25533@ns2.icon.net>
Rendered body type: text/plain

>
>Hi All,
>   I'm looking to hear from anyone that has NETROM running
>efficiently and succesfully on a JNOS box.

Never happen. Best bet is to disable the netrom JNOS junk before
compile, and hook up to the radio via an X-1 TNC. That way you
have a real Net/Rom (the source was taken directly from the original
and modified) and TCP/IP. Program the X-1 for KISS. You can also
set in the passall KISS mode and it will echo anything on the radio
side to the JNOS side. Good for monitoring if you get lonely.

>Also, I have noticed a weird effect on both AX.25 and NETROM
>connections, it will often repeat a frame even after it has been
>decoded to the receiving end screen and acked, but it just repeats the
>frame and the new frames follow. Anyone know the fixes??? It's a bit

Get version 110L on ucsd. It has an AX.25 T2 timer. None of the
previous versions of JNOS or TNOS, or XNOS, or YNOS, or ZNOS,
or, ... you get the idea ...

--
Steve

56. Re: [NETSIG:2045] TNC-based compression

From: "Brian A. Lantz" <brian@lantz.com>
Date: Tue, 17 Oct 1995 11:25:39 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951017112256.31448B-100000@lantz.com>
Rendered body type: text/plain

On Tue, 17 Oct 1995, Charles Brabham wrote:

> This reminded me of some discussion of TNC-based data compression, much like
> the landline modems currently incorporate.
>
> Is anyone currently working on this idea? If not, WHY NOT?

For the average TNC, the answer is definitely no. The problem is that
most all compression schemes require 8-16K for each compression stream
for use in handling the tokenization and compression, and the TNC2 only
HAS 32K for EVERYTHING.

Landline modems have the luxury of NOT being tied down to Z80s and 32K of
RAM.

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

57. Re: VE3LHO (X1J2 Node_IP_how_to)

From: shawnpat@sierra.net
Date: Wed, 18 Oct 1995 04:50:00 -0700
To: netsig@tapr.org

Message-ID: <199510180449.AA10999@diamond.sierra.net>
Rendered body type: text/plain

>> IP Address (Internet Protocall address) is the numerical-hieratrical(sp?)
>> system used on the Internet. The 44.xx.xx.xx group of addresses are
>> assigned exclusively for amateur radio use. This was done in
>> recognition of the amateur community and it's need for proper
>> interface with the Internet. On the Internet each address is also
>> assigned a Domain Name (ie: tapr.org or algedi.ampr.org), which are
>> kept in Master and Sub data bases. On the amateur radio side, the
>> Domain Name is the callsign-SSID of each node or station (except for
>
>Perhaps I'm misinterpreting this but yourcallsign-SSID isn't your
>domain name. The callsign-SSID defines a node's address on a
>particular network and is thus more like a link level or media
>address. On typical wire networks this corresponds to a 48 bit
>IEEE MAC address (e.g. an ethernet address). Callsigns are often
>used as parts of domain names tho.
>
>Dave Lapp
>VE3LHO

What I am basing my statement on is the Domain file which Jnos, Wnos
etc use in a station set up.

OOps yes, I now remember (see your point). I should have said then
that the call-SSID *could* become a part of the Domain name as in the
example of 44.125.131.?? = wa7bwf-2.router.ampr.org or 44.125.131.1 =
n7wvz.bbs.ampr.org.

Sorry for the missleading information and thank you for the correction.
I trashed my hard drive here a month ago and lost my reference files,
so that part of my post was done from (lack of) memory.

Here the *router* or *bbs* part of the domain name helps to identify the
difference between the possible destinations and just the routers between.
Since the X1J is only a pseudo-router (not a complete one, only a workable
one) then it cannot be a destination for anything but a ping.

The ping hits the node and gets returned, then the sending station
calculates the time between send and receive. Just a note, that if you
use ping to test, the first ping often times gets lost on a busy link.
Try ping several times before deciding that it doesn't work. You can also
observe the IP packets on full monitor.

73 de Shawn, N7XBM (Elko ARC Nodeop).

58. Re: K5DI (X1J2 Node_IP_how_to)

From: shawnpat@sierra.net
Date: Wed, 18 Oct 1995 05:30:02 -0700
To: netsig@tapr.org
Message-ID: <199510180529.AA14914@diamond.sierra.net>
Rendered body type: text/plain

>>arp   {Defigns the direct neighbors similar to AX25 Routes}
>>ELKO:WA7BWF-1}
>>Destination   P hw-type Callsign   Mode Timer
>>44.125.131.132   P AX.25   N7XBM-1   VC   {VC = Virtual Circuit}
>>44.125.131.1   P AX.25   N7WVZ   DG {This is an MSYS BBS}
>>44.125.131.3   P AX.25   N7XBM-13   DG   {DG = Data Gram}
>>44.125.131.4   P AX.25   N7XBM-14   DG   {DG is for true IP-stations}
>>44.125.131.130   P AX.25   WB7BSP-1   VC   {VC is for pseudo-routers ie:
>>44.125.131.131   P AX.25   WA7BWF-3   VC   x1j nodes. P=publish}
>>{HW-type = AX.25 or NetRom protocall}
>
>
>   We use nothing but Data Gram. I have never figured out why I wanted
>Virtual Circuit. Hope to learn some time...

Here I relied on N8KHN for his input. He did some experiments using his
gateway (Wnos, hamgate.unr.edu ??) and his net of 9k6 X1J nodes to test
the VC vs DG and as I recall the verdict was the DG didn't allways work
X1J to X1J very well. This has been some time ago, so I really do not
remember (besides getting snowed by the TCP/IP lingo).

>>There may be other minor changes that improve performance. If so I hope
>>some one will post them here.

>   Shawn this is the best I have seen. You are somehow involved with

>the internet networking or you would not have gone this far. I hope this
>will help others as much as it has helped me.

Thank you Karl. Like I said it was not all of my making. Bill N8KHN
has kept his ear to the ground on packet and TCP/IP far longer than I
have been a ham. But I can say that at least to this point I do
understand the X1J. Also when the resources come together, I too plan
to have a gateway here and have done some study toward that end.

There is currently a discussion about increasing the MTU parameter on
the NOS-BBS mailing list. I hope that it may have a direct application
to X1J. I'll try to pass along the outcome unless some one with better
understanding would like to. Those guys often snow me at this time.

(The KA9Q NOS-BBS Mailing List: nos-bbs@hydra.carleton.ca)

73 de Shawn, N7XBM.

59. Re: Vodall (Reliability vs. performance)

From: shawnpat@sierra.net
Date: Wed, 18 Oct 1995 05:38:13 -0700
To: netsig@tapr.org
Message-ID: <199510180537.AA15895@diamond.sierra.net>
Rendered body type: text/plain

>My suggestion here to folks is that they first add a UHF path to
>take the load node-to-node load off of 145.010. Then, after the
>user traffic on 01 gets back to the cricital point and the bank account
>has had a chance to recover, I suggest they add an addition node
>for user access.
>
>It sounds like others have found this a reasonable system. What are the
>thoughts about which should come first? The UHF or the Local Access node?

Though it some times is not possible to do what you want, I agree that
the backbone take priority over a second access node. Even though (as
in my case) it is easier to build a 1k2 node because the resources are
allready laying around.

73 de Shawn, N7XBM.

60. Re: [NETSIG:2043] Re: X1J2 Node_IP_how_to.

From: mbtindor@cris.com (Michael Tindor)
Date: Tue, 17 Oct 95 10:26:49 EDT
To: netsig@tapr.org
Message-ID: <199510181323.JAA18632@deathstar.cris.com>
Rendered body type: text/plain

>>ipadd
>>ELKO:WA7BWF-1} My IP address : 44.125.131.129
>>{each node has a unique address, assigned by your area IP coordinator.}
>>{Some Nodeops have devised a way to have a whole stack use a single
>> address. I'm not sure how that works.}
>

>   I don't think it does. As it is the node is a sudo router and should
>have 3 ports. It doesn't and that leads to hair pulling. I think every node
>has to have it's own ip number so that ip can drive through them...

Yep, it is possible to run at least two nodes (and probably a whole nodestack though I haven't the
documentation in front of me) with the same IP address and actually put some IP through them.

I did this just to test the docmentation that I found it in and it did work, but it takes a heck of a
lot of effort not to pull your brains out. Having a different IP on every port is much easier to work
with.

This does come in handy though for the places where the sorry IP coordinators don't want to issue
anybody IP addresses, as is what appears to be the case in Western Pennsylvania.

It seems that IPs in WPA are worth more than gold....people have a heck of a hard time getting
them.....and therefore the ole ip coordinator would probably be very impressed at hte person who writes
that they have a 3-node stack but only need one IP.

Mike

61. Re: [NETSIG:2043] Re: X1J2 Node_IP_how_to.

From: mbtindor@cris.com (Michael Tindor)
Date: Tue, 17 Oct 95 10:26:49 EDT

To: netsig@tapr.org
Message-ID: <199510181324.JAA18756@deathstar.cris.com>
Rendered body type: text/plain

>>ipadd
>>ELKO:WA7BWF-1} My IP address : 44.125.131.129
>>{each node has a unique address, assigned by your area IP coordinator.}
>>{Some Nodeops have devised a way to have a whole stack use a single
>> address. I'm not sure how that works.}
>

>   I don't think it does. As it is the node is a sudo router and should
>have 3 ports. It doesn't and that leads to hair pulling. I think every node
>has to have it's own ip number so that ip can drive through them...

Yep, it is possible to run at least two nodes (and probably a whole nodestack though I haven't the documentation in front of me) with the same IP address and actually put some IP through them.

I did this just to test the docmentation that I found it in and it did work, but it takes a heck of a lot of effort not to pull your brains out. Having a different IP on every port is much easier to work with.

This does come in handy though for the places where the sorry IP coordinators don't want to issue anybody IP addresses, as is what appears to be the case in Western Pennsylvania.

It seems that IPs in WPA are worth more than gold....people have a heck of a hard time getting them.....and therefore the ole ip coordinator would probably be very impressed at hte person who writes that they have a 3-node stack but only need one IP.

Mike

62. NEDA-suggested parms on Web

From: n1gpy@ka2tcq.ampr.org (Frank)
Date: Wed, 18 Oct 95 10:25:41 UTC
To: netsig@tapr.org
Message-ID: <615@ka2tcq.ampr.org>
Rendered body type: text/plain

Message-Id: 615_ka2tcq
From: n1gpy@ka2tcq (Frank)
To: netsig@tapr.org

The NEDA suggested node configuration paramaters can be found on
the NEDA website:

  http://www.cam.org/~dino/neda/neda.html

73 de Frank N1GPY

63. Re: [NETSIG:2040] Re: Reliability vs. performance.

From: Sean Smithers <seans@magick.net>
Date: Wed, 18 Oct 1995 20:30:48 -47900
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <Pine.3.89.9510182046.B31315-0100000@gp.magick.net>
Rendered body type: text/plain

Hello Bill,

We just finished up a three year project here. Our first step was to form
a backbone. That was really necessary as we live in a rather mountainous
region and hidden transmitters were a dime a dozen. Our backbone is on
440 with separate frequencies being shared between four mountain tops.
This keeps the high level nodes from interfering with each other. The
Packet BBS's then link direct to the mountaintop nodes on separate
220 links. Local user access is on 2 meters with number of ports being
dependent on number of active users on a BBS. Our next step is to provide
9600 access on two meters.

We found that the most important aspect of the whole project was getting
the BBS forwarding off user frequencies. The BBS's forwarding interferes
with user access to such a degree that people can get rather discouraged
because of the time involved with the forwarding process. Users
interfering with each other is much easier to take as we can just back
off and take turns. The BBS just doesn't cooperate by taking turns when
it forwards and therefore needs to be eliminated from the equasion.

==========
Sean Smithers

Internet: seans@gp.magick.net
CompuServe: 70132,136
Packet: N7ZWU @ WB7VMS.#MURPH.OR.USA.NOAM

On Tue, 17 Oct 1995, Bill Vodall wrote:

> >
> > I agree Al, our better node stacks provide 145.01, 147.5xx, and a 441/446
> > port as well.
> > The 147 port is the LAN and the 441/446 port(s) are back-bone interconnects.
> > In some cases 220 is used instead of 441 for increased range.
> > 73 - Ron VE1AIC
> >
>
> That's amazing. That's exactly what we've done with the local node
> here. (Mt Royal in the Sweet Grass Hills.)   It has 145.010 (SWT),
> 147.550 (SWTLAN) and 441/446 (#SWT4) for access to the backbone running
>
> My suggestion here to folks is that they first add a UHF path to
> take the load node-to-node load off of 145.010. Then, after the
>

64. Re: [NETSIG:2042] Re: Closed backbones (was Re: ACL On X1J-4)

From: Ed Southall   WD0ELL <ecs@sullivan.hwy66.com>
Date: Wed, 18 Oct 1995 23:58:28 -0500
To: netsig@tapr.org
Message-ID: <9510190859.AA12049@ cpcids.com>
Rendered body type: text/plain

At 08:03 AM 10/17/95 -0500, you wrote:
>>From: Ed Southall WD0ELL <ecs@sullivan.hwy66.com>
<snip>
>>   I see a need for a clarification of terminology here regarding
>>'connections', 'uplinks', and 'downlinks'...
>>...is it not universally agreed that user 'connections' to a
>>backbone node are undesirable, as Tom W2VY says?
>
>I guess the uplink and downlink are netrom terms that I don't use. My point
>is that you may not want to allow for any other RF EMITTERS on a channel
>than the Network facilites that have been designed to be there. I don't
>care if they are Uplink, downlink or peer to peer. If the network designer
>didn't put them there then it is likely that any additional traffic is
>hurting the overall system even though it may seem to work to the person
>who put the new switc/node/bbs/tnc on the channel.
>
>Don't get me wrong some networks may not have enough backbone traffic to
>care,

     It looks like I've succeeded in muddying the very waters I had hoped to
clear (oops!).
     The advantages of having a select few RF emitters on the backbone
channel are overwhelming and well proven in both theory and practice.

>>   It seems to me that the real point for discussion is the advisability
>>of permitting users to 'downlink' onto the backbone frequency. I see
>>reasonably arguments on both sides of that question...
>>73 - Ed
>>
>
>Unless I have missed something an UPlink and Downlink only differ in which
>station initiated the connection (ie sent the SABM)
>____
>Thomas A. Moulton, W2VY   RAM Mobile Data
>w2vy@ram.net   (908) 602-5227
>

    'Uplink' and 'downlink' were terms chosen by the folks at Software 2000
(circa 1985 and pre-TheNet) to explain how their new 'NET/ROM' product was
supposed to work. I had hoped to use those terms to make the distinction
between:
(1) users accessing the network by transmitting (uplinking) to a node on the
backbone frequency (booo...hisss) and
(2) users connecting to a backbone node via the network for the purpose of
then downlinking to a server of some sort (usually a BBS) which might be one
of the 'select few RF emitters' referred to earlier.

     I'm not advocating (2) but I think it worthy of discussion. It may not
be the case on the coasts but here in the midwest most BBS systems forward
on the backbone by transmitting directly on the backbone frequency to

network nodes. These are peer level connections since most use a netrom emulator (ala G8BPQ) or have built-in netrom capability (MSYS, NOS, etc.). These are 'pseudo-nodes', however, since no through traffic is routed through them.

Thus, if the pseudo-node ABCBBS:W0ABC allows user connects on its backbone port (and that is commonly the case in these parts), users generate lots of additional backbone packets even though they never emit RF on the backbone frequency.

Should users be able to downlink from backbone nodes? Should servers be on the backbone at all? If not, by what alternate means do they access the backbone for high volume data transfers (compressed message forwarding and the like)? Your input please, folks.

I hope this clarifies what I had hope to see discussed. TNX and 73 - Ed


```
+-------------------------------------------------------------+
| Edward C. Southall          New Haven MO USA                |
| Internet: ecs@hwy66.com     AmPRnet: wd0ell@wd0ell.ampr.org |
|           wd0ell@amsat.org  AX.25: wd0ell@wb0qgr.mo.usa.noam|
+-------------------------------------------------------------+
```


65. Re: [NETSIG:2043] Re: X1J2 Node_IP_how_to.

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 17 Oct 1995 16:29:57 -0500
To: netsig@tapr.org
Message-ID: <199510172157.QAA27761@ns2.icon.net>
Rendered body type: text/plain

>>{Some Nodeops have devised a way to have a whole stack use a single
>> address. I'm not sure how that works.}
>
>   I don't think it does. As it is the node is a sudo router and should
>have 3 ports.

I don't know what a sudo router is, but I can offer a method to do this. What you do is have all three nodes set for KISS, with the pass-through feature on. Everything that is on the RF side is echoed on the serial side. Thus, three nodes see all channels. Is this good? No. In the real world you want to keep data in its own domain (leg). The X-1 allows you to tie the three legs together, but you certainly don't want to echo everything on the RF side. This is like using an Ethernet Repeater between two buildings, rather than a Bridge device. The Bridge only allows packets to pass that have a need.

>   We use nothing but Data Gram. I have never figured out why I wanted
>Virtual Circuit. Hope to learn some time...

Datagram is for a closed trunk. Any chance of interference (highly likely on many RF channels) must be thwarted. If the interference is light to non-existant, than the overhead of AX.25 connected mode is not needed. If the path quality is below 90%, then you may want to start using connected mode. But keep it aggressive. Bang the other node into submission. Waiting 30 or 40 seconds for ACKs at this level is very frustrating to users. Every TCP station uses VC by the way; it's a VC protocol.

--
Steve

66. Re: [NETSIG:2048] Re: Closed backbones (was Re: ACL On X1J-4)

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 19 Oct 95 09:26:11 EDT
To: netsig@tapr.org
Message-ID: <15021573.1f26@ram.net>
Rendered body type: text/plain

>>>If you have a backbone of any protocol that is tuned for a point to
>>>point link (ie 2 stations) if a third untuned station jumps on the channel
>
>>>you will very quickly generate a bottle neck due to lower throughput due
>>>to unexpected collisions/retries.
>>
>>Provided you're using good old CSMA...
>>DAMA avoids collisions. Hidden transmitters do not exist any more.
>>
>>That way, you can even have 3 stations working semi-duplex.

It will also be lower throughput, nothing is free.

Yes DAMA will help performance with hidden transmitters.

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

67. Re: [NETSIG:2058] Re: Closed backbones

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 19 Oct 95 10:17:28 EDT
To: netsig@tapr.org
Message-ID: <15021573.1f27@ram.net>
Rendered body type: text/plain

>
>   Thus, if the pseudo-node ABCBBS:W0ABC allows user connects on its
>backbone port (and that is commonly the case in these parts), users generate
>lots of additional backbone packets even though they never emit RF on the
>backbone frequency.
>
>   Should users be able to downlink from backbone nodes? Should servers be
>on the backbone at all? If not, by what alternate means do they access the
>backbone for high volume data transfers (compressed message forwarding and
>the like)? Your input please, folks.
>

I consider what you are calling Backbone channels to be private or limited
access User ports for Network Facilities.

In our network we advocate installation of private channels for dedicated
access for high volume network facilities (like a busy BBS) and they are
usually point to point, low power with beams.

I try to always get the BBS off of the user channel, since even if a few
of the users can acess it directly they will reduce the usable bandwidth
for others at that time.

My feeling is: Any High Volume Emitter should have contention free access.

_____
Thomas A. Moulton, W2VY RAM Mobile Data
w2vy@ram.net (908) 602-5227

68. Re: [NETSIG:2050] Re: TNC-based compression

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 19 Oct 1995 10:36:18 -0400
To: netsig@tapr.org
Message-ID: <199510191436.KAA04563@nadc.nadc.navy.mil>
Rendered body type: text/plain

>>Landline modems have the luxury of NOT being tied down to Z80s and 32K of
RAM.

They also only have one stream.

Doug

69. Re: [NETSIG:2050] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 19 Oct 1995 10:14:42 -0500
To: netsig@tapr.org
Message-ID: <199510191514.KAA17330@mercury.texoma.com>
Rendered body type: text/plain

According to Brian Lantz...

>On Tue, 17 Oct 1995, Charles Brabham wrote:
>
>> This reminded me of some discussion of TNC-based data compression, much like
>> the landline modems currently incorporate.
>>
>> Is anyone currently working on this idea? If not, WHY NOT?
>
>For the average TNC, the answer is definitely no. The problem is that
>most all compression schemes require 8-16K for each compression stream

>for use in handling the tokenization and compression, and the TNC2 only
>HAS 32K for EVERYTHING.
>
>Landline modems have the luxury of NOT being tied down to Z80s and 32K of
>RAM.
>
>
TNC's aren't tied down to these either...

I guess I wasn't being clear.. I'm not wondering about retro-fits for old
TNC designs, but more about incorporating compression in a future design, a
new TNC. I'm really indifferent as to which CPU is used and how much RAM,
since prices for these are getting better all the time. If it takes an 8088
or 286 CPU and 640k of RAM for example, then so be it.

Most TNC2 clones now cost around 100 bucks, but that's mainly due to
tradition, and the fact that manufacurers "charge what the traffic will
bear". If TNC prices reflected the lower component prices and improved
manufacturing processes of today, we'd be throwing less money on the counter
when we bought a TNC2 clone. Inertia is at work here. Manufacturers are
reaping the well-deserved benifit of charging old prices for an old design.
They stuck thier necks out when the profit margin was much lower, and now
they're making up for that a bit. I won't fault them for it, as I would most
certainly do the same thing myself if I was in the TNC manufacturing
business. That "gravy train" is the carrot on a stick which brings us new,
innovative equipment. Since the "ride" is about over anyway for the TNC2
clone, manufacurers should be looking at new designs.
What this means is that a more sophisticated design with features such as
full-time compression could most certainly be done, and we really shouldn't
expect to have to pay a heck of a lot more for it. Manufacturers will be
looking at less immediate profit that they are currently getting from the
classic TNC2 clone, but will be setting themselves up for the same kind of
"gravy train" with the new design in future years when traditional TNC2
clones are no longer selling at a worthwhile price, and the newer design's
margin of profit per unit grows. (For the same reasons it has for the TNC2
clones.)

I'd expect the new design to be compatable with current equipment of course,
but to be able to recognize another "compressed" TNC and act accordingly.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

I was gratified to be able to answer promptly. I said I didn't know..

70. Re: [NETSIG:2050] Re: TNC-based compression

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Thu, 19 Oct 1995 11:17:37 -0400 (EDT)
To: netsig@tapr.org, tapr-tnc@tapr.org
Message-ID: <Pine.LNX.3.91.951019110824.201B-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Thu, 19 Oct 1995, Brian A. Lantz wrote in netsig:

> On Tue, 17 Oct 1995, Charles Brabham wrote:
>
> > This reminded me of some discussion of TNC-based data compression, much like
> > the landline modems currently incorporate.
> >
> > Is anyone currently working on this idea? If not, WHY NOT?
>
> For the average TNC, the answer is definitely no. The problem is that
> most all compression schemes require 8-16K for each compression stream
> for use in handling the tokenization and compression, and the TNC2 only
> HAS 32K for EVERYTHING.

Actually it wouldn't be too demanding on memory or horsepower to throw in
simple huffman coding similar to that used in pactor. The code to do it
in TNC-2 exists but wasn't emplaced because of unresolved
capability-handshaking issues in L2V2 and the nearly sacreligious
difficulty of fitting V3 to the current incarnation of code.

Suggestions on "hacks" to provide for downward compatible capability
handshaking short of a fullblown V3 implementation are invited. Maybe
some silly id in a digipeater field?

[please crosspost followups to tapr-tnc@tapr.org]

--
Howard Goldstein <hg@n2wx.ampr.org> http://www.tapr.org/~n2wx/

71. Re: [NETSIG:2054] Re: X1J2 Node_IP_how_to.

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 19 Oct 1995 11:26:17 -0400
To: netsig@tapr.org
Message-ID: <199510191526.LAA11288@nadc.nadc.navy.mil>
Rendered body type: text/plain

What is the problem with IP coordination out there in Western PA?

Is it a problem of knowing who to contact? Lack of response?

I am the coordinator for EPA and hopefully I do not have those problems here. I assigned subnets for the region and sub-coordinators who then report to me. It is very difficult at best to coordinate an area as large a half the state of Pennsylvania. Some of thes areas are very rural. You get a single or maybe a couple of guys out there in the sticks who want an address. They have no understanding of what to do with it once they get it plus the fact that there is no path to anywhere useful.

I am an advocate of IP and we have a very successful network in South Eastern Pennsylvania and Southern New Jersey. Getting this to the remote areas can be a challenge as well as regular ax25 or netrom.

Doug

72. Re: [NETSIG:2055] Re: Coordinators who don't

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 19 Oct 1995 10:39:04 -0500
To: netsig@tapr.org
Message-ID: <199510191606.LAA32626@ns2.icon.net>
Rendered body type: text/plain

>This does come in handy though for the places where the sorry IP coordinators
>don't want to issue anybody IP addresses, as is what appears to be the case
in Western
>Pennsylvania.
>
>It seems that IPs in WPA are worth more than gold....people have a heck of
a hard time
>getting them.....and therefore the ole ip coordinator would probably be
very impressed
>at the person who writes that they have a 3-node stack but only need one IP.

There are two solutions to this:

1. Offer to take over coordination. Evidently the current coordinator isn't
a promoter
   of TCP/IP. Contact brian@ucsd.edu and state your case. He can hire, so
I guess he
   can fire. This is a volunteer position, not a birth-right.

2. Don't use his numbers. Contact another coordinator and get addresses from
him. They
   don't have to be "in state" numbers. You can also use any address you
want on most
   packet radio networks, as they are almost never connected to other IP
networks. In
   this case I recommend the 10.x.x.x numbers. Also there is a group of
44.x.x.x numbers
   that are not assigned to any state. You could also use the space IP's. Get
   creative here. Once the coordinator sees you having fun in spite of him,
he'll offer
   more addresses, or remain a fool.

73. X1J question

From: Jtaylor@usacec-osigw.army.mil
Date: Thu, 19 Oct 95 8:32:55 MST
To: netsig@tapr.org
Message-ID: <199510191607.LAA31131@sys1.tapr.org>
Rendered body type: text/plain

While we are hot and heavy on X1J node functions, what is the PURPOSE of the broadcast address? What does it specifically do and what are it's applications?

73 de Jack

74. Re: [NETSIG:2048] Re: Closed backbones (was Re: ACL On X1J-4)

From: ferracci@imaginet.fr (Laurent Ferracci - F1JKJ)
Date: Thu, 19 Oct 1995 15:08:19 GMT
To: netsig@tapr.org
Message-ID: <199510191607.RAA12161@icaria.imaginet.fr>
Rendered body type: text/plain

On Thu, 19 Oct 1995 08:18:32 -0500, you wrote:

>>DAMA avoids collisions. Hidden transmitters do not exist any more.
>>That way, you can even have 3 stations working semi-duplex.
>
>Sounds great. Where did you get your DAMA ROM, does it work with a
>TNC-2? Please upload the software (ROM code, Source, etc) and tell
>us where to download it! It sounds like your running this software,
>tell us more.

You will find details about DAMA in TAPR's "Packet Status Register"
#58, page 12, and in ARRL 8th DCC proceedings. If you don't have it,
just ask me, i've got an electronic version ready to be sent.

DAMA has been implemented in its slave version, in the TF27B firmware
Eprom for TNC2 (together with SMACK, a kind of CRCed-KISS), and also
in TFPCX 2.1 or TFX2.7 (for use with 1K2 or 9K6 Baycoms).
The master version of DAMA is implemented in TheNetNode from
NORD><LINK, and maybe BaycomNode, BaycomBox and Flexnet (not too sure
about these ones).

Many users are ready to run DAMA (every TFPCX user has the slave
version). What remains to do is to run DAMA-Master nodes.
Some exist, they are compatible with TheNet, but we could ask for a
wider implementation of the DAMA-master protocol to node-systems
developers.

I've got a document giving details about DAMA implementation, but it's
in german. I am ready to traduce it, if a programmer asks for it.

+------------------------------+----------------------------+
| From Laurent FERRACCI, F1JKJ | > ferracci@imaginet.fr < |
| Montpellier, FRANCE | F1JKJ @F1RVP.FMLR.FRA.EU |
+------------------------------+----------------------------+

[PGP key on public-key servers]

75. Re: [NETSIG:2058] Re: Closed backbones (was Re: ACL On X1J-4)

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 19 Oct 1995 11:40:24 -0500
To: netsig@tapr.org
Message-ID: <199510191707.MAA00894@ns2.icon.net>
Rendered body type: text/plain

>(1) users accessing the network by transmitting (uplinking) to a node on the
>backbone frequency (booo...hisss) and

This is bad, but it highlights the fact that the user channel is too busy.
In some cases, creating a backbone channel that dumps on the, already too
busy, user channel is a poor design. In this case, a backbone will solve
the problem by also creating another user channel. What happens in some
cases, is the users on channel A connect to users on channel B, rather
than channel A and B users, using the backbone. This is referred to as
"Their too damn lazy to turn the frequency dial." What happens here, is
a few get frustrated and set up a station on the backbone frequency.
"Hey," they say, "This is fast!" (relative). But as has been pointed out
several times already, current node technology (Rose, X-1) are point-point
technology, and not designed to work well when both "points" can't hear all
the stations. Just the opposite, they don't work well when they hear a lot
of stations, either.

>(2) users connecting to a backbone node via the network for the purpose of
>then downlinking to a server of some sort (usually a BBS) which might be one
>of the 'select few RF emitters' referred to earlier.

Actually this would be faster, as there is no RF node to hop through.

>   Should users be able to downlink from backbone nodes? Should servers be
>on the backbone at all? If not, by what alternate means do they access the
>backbone for high volume data transfers (compressed message forwarding and
>the like)? Your input please, folks.

No. A backbone isn't a LAN, it's a transport between LAN's. If it's not
point-point between LAN's, then it's not a backbone; it's another LAN.
It's like having two ethernet LAN's that are connected via the internet
backbone. This backbone is designed to route packets very fast. It's a
huge black box that sits in the middle, with LAN's connecting to it for
routing. The Black Box isn't a LAN itself, it's just a router.

I think that speed is really the issue here. We want to ax25 to a gateway
(Rose or X-1) and be instantly connected to another point. If not instantly,
then within 10 seconds. If it doesn't meet the 10 second rule, it's not a
LAN, it's not a backbone, it's another piece of ----. We don't need many
more of those, as we have plenty already.

The other thing most packet people count on is 2m user channels. But this
is really a poor way to go. We don't have any packet repeaters in OKC, but
I am convinced that this is the only way to go for a LAN. Set up a repeater
and hook up a TAPR regenerator, and there's your LAN. Now those guys with
the mag-mount on the refridge, can be heard by everyone. The speed will be
noticeable right away. Even if you did this at 1.2k rather than 9.6k you'd
still notice the improvement. Now you can really see what a backbone is for.
It's to connect those repeater LAN's together. Here you can see that the
backbone can even be the same speed as the LAN.

I propose a repeater project. The best idea wins a free ticket to Digital
96 (Air and Hotel). It must provide for a backbone port.

Steve/n5owk
"Flat Tax in 96 - Forbes"

76. Re: [NETSIG:2058] Re: Closed backbones (was Re: ACL On X1J-4)

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 19 Oct 1995 12:15:54 -0500
To: netsig@tapr.org
Message-ID: <199510191742.MAA01450@ns2.icon.net>
Rendered body type: text/plain

>   Should users be able to downlink from backbone nodes? Should servers be
>on the backbone at all? If not, by what alternate means do they access the
>backbone for high volume data transfers (compressed message forwarding and
>the like)?

I had another thought on this subject. It's one that reminds me of a bunch
of CB'ers. And that is BBS forwarding on the user channel.

It is said that Amateurs are technically more capable than CB'ers, but why
then do they build a BBS system with a single port. That's like a telephone
BBS with one phone line. Here the phone line BBS can forward during the
early morning or mid-day idle period and get all messages transported. But
a packet BBS forwards all day long to keep up. The 1.2k speed is so slow
it is always behind schedule.

You show me a single port BBS, and I'll show you a CB'er.

With the availability of dual-band rigs, this opens up the possibility for
cross-band repeaters. Here, the CB'er can buy a UHF receiver from Ramsey
and still use his RoadKing on VHF. While the Amateur can use the dual band
rig. Both achieving the same goal of an in-band repeater.

Steve/n5owk
"Flat Tax in 96 - Forbes"

77. Re: [NETSIG:2057] Re: Reliability vs. performance.

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 19 Oct 1995 13:41:04 -0400
To: netsig@tapr.org
Message-ID: <199510191741.NAA25518@nadc.nadc.navy.mil>
Rendered body type: text/plain

>>We found that the most important aspect of the whole prting
>>the BBS forwarding off user frequencies. The BBS's forwarding interferes
>>with user involved with the forwarding process. Users
>>interfering with each other is much easier to take as we can just back

>>off and take turns. The BBS just doesn't cooperate by taking turns when
>>it forwards and therefore needs to be eliminated from the equasion.

I don't understand this? Unless the BBS operator has a persist or DWAIT
set improperly it should share the channel. Maybe the BBS op's need to
be alittle less aggressive. Forwarding is rather low priority in the
scheme of things. I have had complaints of this at times here also on
a TCP/IP channel with a BBS forwarding traffic. I suspect that the BBS
op needs to lower his persist.

What we need is a dynamic persist based on the number of users on a
channel at any given time. Most people set this and forget it. Usually
at some number like 64 or 128 and then switch to a busy channel. TCP/IP
attacks this in a slightly different way with sliding window sizes and
it's own backoff.

Of course my answer is TCP/IP with SMTP, POP and NNTP amoung others.
Users would receive everything on demand WITHOUT ever having to login
to a BBS. Does anyone keyboard anymore? Geez I have better things to
do with my time....

Doug

78. Re: [NETSIG:2051] Re: VE3LHO (X1J2 Node_IP_how_to)

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 19 Oct 1995 13:50:44 -0400
To: netsig@tapr.org
Message-ID: <199510191750.NAA27564@nadc.nadc.navy.mil>
Rendered body type: text/plain

This may be getting off the point of the original thread but
I always strongly suggest (assign) a primary domain name of
<call>.ampr.org - wa3dsp.ampr.org - This is ALWAYS unique
and it allows others to send mail by just knowing your call.
The SSID number has no place in the primary domain name. If
you want to have other machines at the same site networked
to a primary domain then add to that name. I.E. -
morse.wa3dsp.ampr.org etc. etc.

The primary domain should always be able to receive mail or
know how to forward mail either via a local transfer or an
MX record.

This makes it infinitely easier to send mail just by knowing
ones call. In my case wa3dsp.ampr.org is known worldwide thru
internet or amprnet.

Doug

79. X1J version 4 Experiments

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 19 Oct 1995 18:12:16 -0600
To: netsig@tapr.org
Message-ID: <199510200012.SAA12807@acca.nmsu.edu>
Rendered body type: text/plain

Hi Guys, I have made 2 new e-proms with X1J-4 on them. They will not
go to where they will be used until spring next. So I decided to fire one up
and use it as a test bed to learn how the node works. It is on the air now
and has gathered some nodes and like that.

        I just tried to connect to the node but I was refused! 30 minutes
ago while the tnc was still connected to my XT computer I connected just
fine. I expect I didn't do a proper "good bye" to the node and it's not
letting anyone connect. This is going to be a good thing to know....when a
node is left on a 10,000 foot mountain in this state it is the worst
possible problem!

        Anyway I will check out everything I can and give a "aftermarket"
report on performance as a node and IP router.

        ps: It sure takes forever to make a 512kb e-prom in the "Normal" mode.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

80. Re: WD0ELL (Closed backbones)

From: shawnpat@sierra.net
Date: Sat, 21 Oct 1995 01:07:52 -0700
To: netsig@tapr.org
Message-ID: <199510210107.AA02932@diamond.sierra.net>
Rendered body type: text/plain

>   It looks like I've succeeded in muddying the very waters I had hoped to
>clear (oops!).
>   The advantages of having a select few RF emitters on the backbone
>channel are overwhelming and well proven in both theory and practice.
>
<snip>
>   'Uplink' and 'downlink' were terms chosen by the folks at Software 2000
>(circa 1985 and pre-TheNet) to explain how their new 'NET/ROM' product was
>supposed to work. I had hoped to use those terms to make the distinction
>between:
>(1) users accessing the network by transmitting (uplinking) to a node on the
>backbone frequency (booo...hisss) and
>(2) users connecting to a backbone node via the network for the purpose of
>then downlinking to a server of some sort (usually a BBS) which might be one
>of the 'select few RF emitters' referred to earlier.
>
>   I'm not advocating (2) but I think it worthy of discussion. It may not
>be the case on the coasts but here in the midwest most BBS systems forward
>on the backbone by transmitting directly on the backbone frequency to
>network nodes. These are peer level connections since most use a netrom
>emulator (ala G8BPQ) or have built-in netrom capability (MSYS, NOS, etc.).
>These are 'pseudo-nodes', however, since no through traffic is routed
>through them.
>
>   Thus, if the pseudo-node ABCBBS:W0ABC allows user connects on its
>backbone port (and that is commonly the case in these parts), users generate
>lots of additional backbone packets even though they never emit RF on the
>backbone frequency.
>
>   Should users be able to downlink from backbone nodes? Should servers be
>on the backbone at all? If not, by what alternate means do they access the
>backbone for high volume data transfers (compressed message forwarding and
>the like)? Your input please, folks.
>
>   I hope this clarifies what I had hope to see discussed. TNX and 73 - Ed
>
>   +---+
> | Edward C. Southall   New Haven MO USA |
> | Internet: ecs@hwy66.com   AmPRnet: wd0ell@wd0ell.ampr.org |
> | wd0ell@amsat.org   AX.25: wd0ell@wb0qgr.mo.usa.noam |
>   +---+

ED,

The subject you are asking for has been hashed over many times.
The thread has usually evolved into a fire fight over who's and what
system works the best for what ever reasoning.

I think that your second sentence above boils the truth down nicely.
A point to point backbone (A<->B/b<->c/C<->D/d<->e) with perhaps a
regenerative repeater or 2 in the path works the best. So the question
about direct user (bbs/Jnos/station) being able or allowed to connect
(uplink or downlink) directly to the backbone obviously is no.

Now the real-world model of being able to fund the project so that there
is a Forwarding-0nly/Keyboard-Only/APRS-only/DXpc-only/etc node available
for each location where it is needed makes the answer area/traffic/user
specific. I have even heard that areas of the east coast have forwarding
-only backbones because the heavy traffic load on the primary backbone.

So, while I am sure that we all are working for the optimum system,
we all have to make concessions to what is current reality in our areas.
And we can only hope that as time goes on, the perfect system will be
more achievable each year.

73 de Shawn, N7XBM.

81. Re: ssampson (X1J2 Node_IP_how_to)

From: shawnpat@sierra.net
Date: Sat, 21 Oct 1995 01:07:57 -0700
To: netsig@tapr.org
Message-ID: <199510210107.AA02960@diamond.sierra.net>
Rendered body type: text/plain

>>   We use nothing but Data Gram. I have never figured out why I wanted
>>Virtual Circuit. Hope to learn some time...
>
>Datagram is for a closed trunk. Any chance of interference (highly likely on
>many RF channels) must be thwarted. If the interference is light to non-
>existant, than the overhead of AX.25 connected mode is not needed. If the
>path quality is below 90%, then you may want to start using connected mode.
>But keep it aggressive. Bang the other node into submission. Waiting 30 or
>40 seconds for ACKs at this level is very frustrating to users. Every TCP
>station uses VC by the way; it's a VC protocol.
>--
>Steve

Steve, could you provide some more information on this? From the above
I read that DG is a *send it and it will surely be received* type of
protocall, and VC makes a verified connection before passing the data.
Is this correct?

If so, then it looks like DG would be best used on an exclusive frequency
path (if at all) or on a single hardwired connection. Then conversly
VC would be the better choice for radio links, or multiple-paths.

I need to learn this, I think.

73 de Shawn, N7XBM.

82. HAPN organisation

From: bewhite@ibm.net
Date: Sat, 21 Oct 95 13:58:42
To: netsig@tapr.org
Message-ID: <9510212102.BT0017@slip169-8.sy.au.ibm.net>
Rendered body type: text/plain

Help !
       A couple of months ago I sent a bank draft to the HAPN group but
have heard nothing since. I sent a follow up letter but still nothing.
Does anyone have an email address for them ?
        73
   Barry White
   bewhite@ibm.net
   VK2AAB @ VK2AAB.NSW.AUS.OC

83. Re: [NETSIG:2040] Re: Reliability vs. performance.

From: Ed Southall   WD0ELL <ecs@sullivan.hwy66.com>
Date: Sat, 21 Oct 1995 00:39:12 -0500
To: netsig@tapr.org
Message-ID: <9510210538.AA00396@sullivan>
Rendered body type: text/plain

<snip>
>> I agree Al, our better node stacks provide 145.01, 147.5xx, and a 441/446
>> port as well.
>> The 147 port is the LAN and the 441/446 port(s) are back-bone interconnects.
>> In some cases 220 is used instead of 441 for increased range.
>> 73 - Ron VE1AIC
>>
>
>That's amazing. That's exactly what we've done with the local node
>here. (Mt Royal in the Sweet Grass Hills.)   It has 145.010 (SWT),
>147.550 (SWTLAN) and 441/446 (#SWT4) for access to the backbone running
>south. Despite a little desense between SWT and SWTLAN from having
>no duplexer and antennas far too close - it works great.
>
>My suggestion here to folks is that they first add a UHF path to
>take the load node-to-node load off of 145.010. Then, after the
>user traffic on 01 gets back to the cricital point and the bank account
>has had a chance to recover, I suggest they add an addition node
>for user access.
>
>It sounds like others have found this a reasonable system. What are the
>thoughts about which should come first? The UHF or the Local Access node?
>
>73 - Bill
>

     I'll weigh in on that question. Locally (East Central Missouri) we went
with the UHF option first. Advantage: 300 MHz separation eliminates the
desense issue and even allows for the use of a single antenna for both
ports. Disadvantage: The use of omnidirectional antennas on the 'backbone'

frequency combined with the lack of any other 9600 bps resources (at that time) resulted in the proliferation of BBS and 9600 users to the point where the 'backbone' is now more of a wide area network.

All things considered, I think the development of UHF first was the best option, it provides proof to users that 9600+ really can be made to work and helps generate the desire for the higher speed user LANs that will hopefully come later. 73 - Ed

+---+
| Edward C. Southall   New Haven MO USA |
| Internet: ecs@hwy66.com   AmPRnet: wd0ell@wd0ell.ampr.org |
| wd0ell@amsat.org   AX.25: wd0ell@wb0qgr.mo.usa.noam |
+---+

84. Re: [NETSIG:2057] Re: Reliability vs. performance.

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sat, 21 Oct 1995 10:34:13 -0300
To: netsig@tapr.org
Message-ID: <199510211334.KAA05766@bud.peinet.pe.ca>
Rendered body type: text/plain

>
>Hello Bill,
>
>We just finished up a three year project here. Our first step was to form
>a backbone. That was really necessary as we live in a rather mountainous
[snip]
>
>We found that the most important aspect of the whole project was getting
>the BBS forwarding off user frequencies. The BBS's forwarding interferes
>with user access to such a degree that people can get rather discouraged
>because of the time involved with the forwarding process. Users
>interfering with each other is much easier to take as we can just back
>off and take turns. =
>Sean Smithers
>Internet: seans@gp.magick.net
>CompuServe: 70132,136
>Packet: N7ZWU @ WB7VMS.#MURPH.OR.USA.NOAM
>
>On Tue, 17 Oct 1995, Bill Vodall wrote:
>
>>
>> My suggestion here to folks is that they first add a UHF path to
>> take the load node-to-node load off of 145.010. Then, after the
>>
>

Yes agreed, get the UHF back-bone up as first priority.

73 - Ron VE1AIC

85. Re: [NETSIG:2058] Re: Closed backbones (was Re: ACL On X1J-4)

From: ssampson@icon.net (Steve Sampson)
Date: Sat, 21 Oct 1995 10:43:43 -0500
To: netsig@tapr.org
Message-ID: <199510211610.LAA15486@ns2.icon.net>
Rendered body type: text/plain

>   Should users be able to downlink from backbone nodes? Should servers be
>on the backbone at all? If not, by what alternate means do they access the
>backbone for high volume data transfers (compressed message forwarding and
>the like)?

I had another thought on this subject, and that is BBS forwarding on the user channel.

Why do they build a BBS system with a single port. That's like a telephone BBS with one phone line. Here the phone line BBS can forward during the early morning or mid-day idle period and get all messages transported. But a packet BBS forwards all day long to keep up. The 1.2k speed is so slow it is always behind schedule.

With the availability of dual-band rigs, this opens up the possibility for cross-band repeaters. Here, the low-tech can buy a UHF receiver from Ramsey and still use his 2m rig. While the Amateur can use the dual band rig. Both achieving the same goal of an in-band repeater.

Steve/n5owk

86. Re: [NETSIG:2058] Re: Closed backbones (was Re: ACL On X1J-4)

From: ssampson@icon.net (Steve Sampson)
Date: Sat, 21 Oct 1995 10:49:19 -0500
To: netsig@tapr.org
Message-ID: <199510211616.LAA16282@ns2.icon.net>
Rendered body type: text/plain

>(1) users accessing the network by transmitting (uplinking) to a node on the
>backbone frequency (booo...hisss) and

This is bad, but it highlights the fact that the user channel is too busy.
In some cases, creating a backbone channel that dumps on the, already too
busy, user channel is a poor design. In this case, a backbone will solve
the problem by also creating another user channel. What happens in some
cases, is the users on channel A connect to users on channel B, rather
than channel A and B users, using the backbone.   What happens here, is
a few get frustrated and set up a station on the backbone frequency.
"Hey," they say, "This is fast!" (relative). But as has been pointed out
several times already, current node technology (Rose, X-1) are point-point
technology, and not designed to work well when both "points" can't hear all
the stations. Just the opposite, they don't work well when they hear a lot
of stations, either.

>(2) users connecting to a backbone node via the network for the purpose of
>then downlinking to a server of some sort (usually a BBS) which might be one
>of the 'select few RF emitters' referred to earlier.

Actually this would be faster, as there is no RF node to hop through.

>   Should users be able to downlink from backbone nodes? Should servers be
>on the backbone at all? If not, by what alternate means do they access the
>backbone for high volume data transfers (compressed message forwarding and
>the like)? Your input please, folks.

No. A backbone isn't a LAN, it's a transport between LAN's. If it's not
point-point between LAN's, then it's not a backbone; it's another LAN.
It's like having two ethernet LAN's that are connected via the internet
backbone. This backbone is designed to route packets very fast. It's a
huge black box that sits in the middle, with LAN's connecting to it for
routing. The Black Box isn't a LAN itself, it's just a router.

I think that speed is really the issue here. We want to ax25 to a gateway
(Rose or X-1) and be instantly connected to another point. If not instantly,
then within 10 seconds. If it doesn't meet the 10 second rule, it's not a
LAN, it's not a backbone.

The other thing most packet people count on is 2m user channels. But this
is really a poor way to go. We don't have any packet repeaters in OKC, but
I am convinced that this is the only way to go for a LAN. Set up a repeater
and hook up a TAPR regenerator, and there's your LAN. Now those guys with
the mag-mount on the refridge, can be heard by everyone. The speed will be
noticeable right away. Even if you did this at 1.2k rather than 9.6k you'd
still notice the improvement. Now you can really see what a backbone is for.
It's to connect those repeater LAN's together. Here you can see that the
backbone can even be the same speed as the LAN.

I propose a repeater project (in-band or cross-band). The best idea wins a free
ticket to Digital 96 (Air and Hotel). It must provide for a backbone port
without
an Omni antenna.

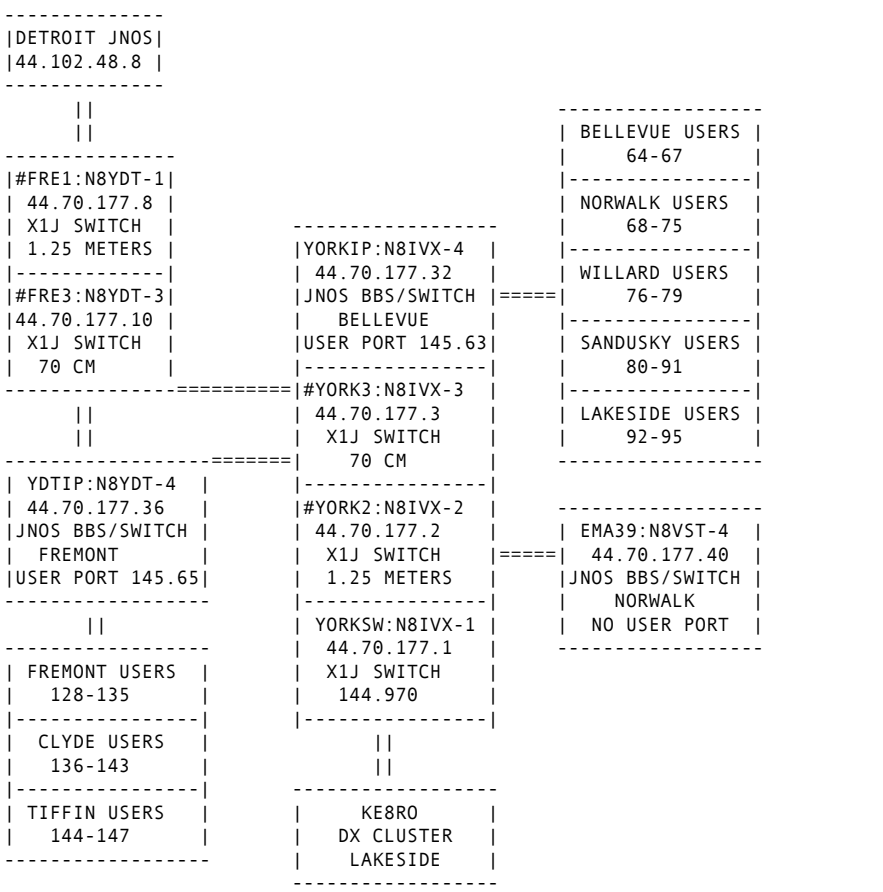
Steve/n5owk

87. Re: X1J2 Node_IP

From: "Stephen D. Goff" <102413.410@compuserve.com>
Date: 19 Oct 95 15:11:34 EDT
To: TAPR NETSIG <netsig@tapr.org>
Message-ID: <951019191133_102413.410_BHA134-1@CompuServe.COM>
Rendered body type: text/plain

For those who still have trouble with subnetting, this is how I set
our network up...

First, I will attempt to give a visual aid as to how our network is
currently laid out in Northern Ohio:



There are other connections not shown for clarity. I use a chart I made up to help visualize the subnetting:

SWITCHES								SWITCHES OFF SWITCHES							
Octet 1	1	2	3	4	5	6	7	8	Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16	Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24	Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32	Octet 4	25	26	27	28	29	30	31	32

DEC	BINARY								DEC	BINARY							
BELLEVUE X1J SWITCHES									WOODVILLE X1J SWITCHES								
N/A	0 =	0	0	0	0	0	0	0	0	N8UWS-1	16 =	0	0	0	1	0	0	0	0
N8IVX-1	1 =	0	0	0	0	0	0	0	1		17 =	0	0	0	1	0	0	0	1
N8IVX-2	2 =	0	0	0	0	0	0	1	0		18 =	0	0	0	1	0	0	1	0
N8IVX-3	3 =	0	0	0	0	0	0	1	1		19 =	0	0	0	1	0	0	1	1
BELLEVUE X1J SWITCHES									UNASSIGNED								
N8IVX-8	4 =	0	0	0	0	0	1	0	0		20 =	0	0	0	1	0	1	0	0
N8IVX-9	5 =	0	0	0	0	0	1	0	1		21 =	0	0	0	1	0	1	0	1
	6 =	0	0	0	0	0	1	1	0		22 =	0	0	0	1	0	1	1	0
	7 =	0	0	0	0	0	1	1	1		23 =	0	0	0	1	0	1	1	1
FREMONT X1J SWITCHES									UNASSIGNED								
N8YDT-1	8 =	0	0	0	0	1	0	0	0		24 =	0	0	0	1	1	0	0	0
N8YDT-2	9 =	0	0	0	0	1	0	0	1		25 =	0	0	0	1	1	0	0	1
N8YDT-3	10 =	0	0	0	0	1	0	1	0		26 =	0	0	0	1	1	0	1	0
	11 =	0	0	0	0	1	0	1	1		27 =	0	0	0	1	1	0	1	1
UNASSIGNED									UNASSIGNED								
	12 =	0	0	0	0	1	1	0	0		28 =	0	0	0	1	1	1	0	0
	13 =	0	0	0	0	1	1	0	1		29 =	0	0	0	1	1	1	0	1
	14 =	0	0	0	0	1	1	1	0		30 =	0	0	0	1	1	1	1	0

15 =	0	0	0	0	1	1	1	1	31 =	0	0	0	1	1	1	1	1

SERVERS/HOSTS								
Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32

MSYS BBS'S								
Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32

	DEC	BINARY								DEC	BINARY						
BELLEVUE JNOS BBS									**FREMONT MSYS BBS**								
N8IVX	32 =	0	0	1	0	0	0	0	0	N8FIS	48 =	0	0	1	1	0	0	0	0
	33 =	0	0	1	0	0	0	0	1		49 =	0	0	1	1	0	0	0	1
	34 =	0	0	1	0	0	0	1	0		50 =	0	0	1	1	0	0	1	0
	35 =	0	0	1	0	0	0	1	1		51 =	0	0	1	1	0	0	1	1
FREMONT JNOS BBS									**SANDUSKY MSYS BBS**								
N8YDT	36 =	0	0	1	0	0	1	0	0	W8LBZ	52 =	0	0	1	1	0	1	0	0
	37 =	0	0	1	0	0	1	0	1		53 =	0	0	1	1	0	1	0	1
	38 =	0	0	1	0	0	1	1	0		54 =	0	0	1	1	0	1	1	0
	39 =	0	0	1	0	0	1	1	1		55 =	0	0	1	1	0	1	1	1
NORWALK JNOS BBS									**UNASSIGNED**								
N8VST	40 =	0	0	1	0	1	0	0	0		56 =	0	0	1	1	1	0	0	0
	41 =	0	0	1	0	1	0	0	1		57 =	0	0	1	1	1	0	0	1
	42 =	0	0	1	0	1	0	1	0		58 =	0	0	1	1	1	0	1	0
	43 =	0	0	1	0	1	0	1	1		59 =	0	0	1	1	1	0	1	1
UNASSIGNED									**UNASSIGNED**								
	44 =	0	0	1	0	1	1	0	0		60 =	0	0	1	1	1	1	0	0
	45 =	0	0	1	0	1	1	0	1		61 =	0	0	1	1	1	1	0	1
	46 =	0	0	1	0	1	1	1	0		62 =	0	0	1	1	1	1	1	0
	47 =	0	0	1	0	1	1	1	1		63 =	0	0	1	1	1	1	1	1

BELLEVUE 145.630 USER PORT								
Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32

BELLEVUE 145.630 USER PORT								
Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32

	DEC	BINARY								DEC	BINARY						
BELLEVUE USERS									**SANDUSKY USERS**								
KE8JC	64 =	0	1	0	0	0	0	0	0	N8RFK	80 =	0	1	0	1	0	0	0	0
	65 =	0	1	0	0	0	0	0	1	N8AHK	81 =	0	1	0	1	0	0	0	1
	66 =	0	1	0	0	0	0	1	0	KB8WTR	82 =	0	1	0	1	0	0	1	0
	67 =	0	1	0	0	0	0	1	1	KB8YVL	83 =	0	1	0	1	0	0	1	1
NORWALK USERS									**SANDUSKY USERS**								
KF8TM	68 =	0	1	0	0	0	1	0	0	N8XLS	84 =	0	1	0	1	0	1	0	0
N8YDR	69 =	0	1	0	0	0	1	0	1		85 =	0	1	0	1	0	1	0	1
KB8ZZF	70 =	0	1	0	0	0	1	1	0		86 =	0	1	0	1	0	1	1	0
	71 =	0	1	0	0	0	1	1	1		87 =	0	1	0	1	0	1	1	1
NORWALK USERS									**SANDUSKY USERS**								
	72 =	0	1	0	0	1	0	0	0		88 =	0	1	0	1	1	0	0	0
	73 =	0	1	0	0	1	0	0	1		89 =	0	1	0	1	1	0	0	1
	74 =	0	1	0	0	1	0	1	0		90 =	0	1	0	1	1	0	1	0
	75 =	0	1	0	0	1	0	1	1		91 =	0	1	0	1	1	0	1	1
WILLARD USERS									**LAKESIDE USERS**								
KG8BT	76 =	0	1	0	0	1	1	0	0	KE8RO	92 =	0	1	0	1	1	1	0	0
K8QWY	77 =	0	1	0	0	1	1	0	1	KF8WP	93 =	0	1	0	1	1	1	0	1
	78 =	0	1	0	0	1	1	1	0		94 =	0	1	0	1	1	1	1	0
	79 =	0	1	0	0	1	1	1	1		95 =	0	1	0	1	1	1	1	1

BELLEVUE 9600b 2M PORT	UNASSIGNED
Octet 1 1 2 3 4 5 6 7 8	Octet 1 1 2 3 4 5 6 7 8
Octet 2 9 10 11 12 13 14 15 16	Octet 2 9 10 11 12 13 14 15 16
Octet 3 17 18 19 20 21 22 23 24	Octet 3 17 18 19 20 21 22 23 24
Octet 4 25 26 27 28 29 30 31 32	Octet 4 25 26 27 28 29 30 31 32
DEC BINARY	DEC BINARY
UNASSIGNED	UNASSIGNED
96 = 0 1 1 0 0 0 0 0	112 = 0 1 1 1 0 0 0 0
97 = 0 1 1 0 0 0 0 1	113 = 0 1 1 1 0 0 0 1
98 = 0 1 1 0 0 0 1 0	114 = 0 1 1 1 0 0 1 0
99 = 0 1 1 0 0 0 1 1	115 = 0 1 1 1 0 0 1 1
UNASSIGNED	UNASSIGNED
100 = 0 1 1 0 0 1 0 0	116 = 0 1 1 1 0 1 0 0
101 = 0 1 1 0 0 1 0 1	117 = 0 1 1 1 0 1 0 1
102 = 0 1 1 0 0 1 1 0	118 = 0 1 1 1 0 1 1 0
103 = 0 1 1 0 0 1 1 1	119 = 0 1 1 1 0 1 1 1
UNASSIGNED	UNASSIGNED
104 = 0 1 1 0 1 0 0 0	120 = 0 1 1 1 1 0 0 0
105 = 0 1 1 0 1 0 0 1	121 = 0 1 1 1 1 0 0 1
106 = 0 1 1 0 1 0 1 0	122 = 0 1 1 1 1 0 1 0
107 = 0 1 1 0 1 0 1 1	123 = 0 1 1 1 1 0 1 1
UNASSIGNED	UNASSIGNED
108 = 0 1 1 0 1 1 0 0	124 = 0 1 1 1 1 1 0 0
109 = 0 1 1 0 1 1 0 1	125 = 0 1 1 1 1 1 0 1
110 = 0 1 1 0 1 1 1 0	126 = 0 1 1 1 1 1 1 0
111 = 0 1 1 0 1 1 1 1	127 = 0 1 1 1 1 1 1 1

N8YDT'S 145.650 USER PORT	N8YDT'S 145.650 USER PORT
Octet 1 1 2 3 4 5 6 7 8	Octet 1 1 2 3 4 5 6 7 8
Octet 2 9 10 11 12 13 14 15 16	Octet 2 9 10 11 12 13 14 15 16
Octet 3 17 18 19 20 21 22 23 24	Octet 3 17 18 19 20 21 22 23 24
Octet 4 25 26 27 28 29 30 31 32	Octet 4 25 26 27 28 29 30 31 32
DEC BINARY	DEC BINARY
FREMONT USERS	TIFFIN/FOSTORIA USERS
N8YDS 128 = 1 0 0 0 0 0 0 0	KC8AQE 144 = 1 0 0 1 0 0 0 0
AA8OS 129 = 1 0 0 0 0 0 0 1	KB8QLR 145 = 1 0 0 1 0 0 0 1
N8TRQ 130 = 1 0 0 0 0 0 1 0	146 = 1 0 0 1 0 0 1 0
131 = 1 0 0 0 0 0 1 1	147 = 1 0 0 1 0 0 1 1
FREMONT USERS	UNASSIGNED
132 = 1 0 0 0 0 1 0 0	148 = 1 0 0 1 0 1 0 0
133 = 1 0 0 0 0 1 0 1	149 = 1 0 0 1 0 1 0 1
134 = 1 0 0 0 0 1 1 0	150 = 1 0 0 1 0 1 1 0
135 = 1 0 0 0 0 1 1 1	151 = 1 0 0 1 0 1 1 1
CLYDE USERS	UNASSIGNED
N8AGN 136 = 1 0 0 0 1 0 0 0	152 = 1 0 0 1 1 0 0 0
N2LTH 137 = 1 0 0 0 1 0 0 1	153 = 1 0 0 1 1 0 0 1
N8VXJ 138 = 1 0 0 0 1 0 1 0	154 = 1 0 0 1 1 0 1 0
KA8FZS 139 = 1 0 0 0 1 0 1 1	155 = 1 0 0 1 1 0 1 1
CLYDE USERS	UNASSIGNED
140 = 1 0 0 0 1 1 0 0	156 = 1 0 0 1 1 1 0 0
141 = 1 0 0 0 1 1 0 1	157 = 1 0 0 1 1 1 0 1
142 = 1 0 0 0 1 1 1 0	158 = 1 0 0 1 1 1 1 0
143 = 1 0 0 0 1 1 1 1	159 = 1 0 0 1 1 1 1 1

OFF N8UWS-1 145.650 SWITCH									UNASSIGNED								
Octet 1	1	2	3	4	5	6	7	8	Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16	Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24	Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32	Octet 4	25	26	27	28	29	30	31	32
DEC	BINARY								DEC	BINARY							
WOODVILLE USERS									UNASSIGNED								
N8UWS 160 =	1	0	1	0	0	0	0	0	176 =	1	0	1	1	0	0	0	0
161 =	1	0	1	0	0	0	0	1	177 =	1	0	1	1	0	0	0	1
162 =	1	0	1	0	0	0	1	0	178 =	1	0	1	1	0	0	1	0
163 =	1	0	1	0	0	0	1	1	179 =	1	0	1	1	0	0	1	1
UNASSIGNED									UNASSIGNED								
164 =	1	0	1	0	0	1	0	0	180 =	1	0	1	1	0	1	0	0
165 =	1	0	1	0	0	1	0	1	181 =	1	0	1	1	0	1	0	1
166 =	1	0	1	0	0	1	1	0	182 =	1	0	1	1	0	1	1	0
167 =	1	0	1	0	0	1	1	1	183 =	1	0	1	1	0	1	1	1
TOLEDO USERS									UNASSIGNED								
N8VNR 168 =	1	0	1	0	1	0	0	0	184 =	1	0	1	1	1	0	0	0
169 =	1	0	1	0	1	0	0	1	185 =	1	0	1	1	1	0	0	1
170 =	1	0	1	0	1	0	1	0	186 =	1	0	1	1	1	0	1	0
171 =	1	0	1	0	1	0	1	1	187 =	1	0	1	1	1	0	1	1
UNASSIGNED									UNASSIGNED								
172 =	1	0	1	0	1	1	0	0	188 =	1	0	1	1	1	1	0	0
173 =	1	0	1	0	1	1	0	1	189 =	1	0	1	1	1	1	0	1
174 =	1	0	1	0	1	1	1	0	190 =	1	0	1	1	1	1	1	0
175 =	1	0	1	0	1	1	1	1	191 =	1	0	1	1	1	1	1	1

OFF N8FIS 145.090 PORT									OFF W8LBZ 145.030 PORT								
Octet 1	1	2	3	4	5	6	7	8	Octet 1	1	2	3	4	5	6	7	8
Octet 2	9	10	11	12	13	14	15	16	Octet 2	9	10	11	12	13	14	15	16
Octet 3	17	18	19	20	21	22	23	24	Octet 3	17	18	19	20	21	22	23	24
Octet 4	25	26	27	28	29	30	31	32	Octet 4	25	26	27	28	29	30	31	32
DEC	BINARY								DEC	BINARY							
FREMONT USERS									UNASSIGNED								
KC8HJ 192 =	1	1	0	0	0	0	0	0	208 =	1	1	0	1	0	0	0	0
193 =	1	1	0	0	0	0	0	1	209 =	1	1	0	1	0	0	0	1
194 =	1	1	0	0	0	0	1	0	210 =	1	1	0	1	0	0	1	0
195 =	1	1	0	0	0	0	1	1	211 =	1	1	0	1	0	0	1	1
UNASSIGNED									UNASSIGNED								
196 =	1	1	0	0	0	1	0	0	212 =	1	1	0	1	0	1	0	0
197 =	1	1	0	0	0	1	0	1	213 =	1	1	0	1	0	1	0	1
198 =	1	1	0	0	0	1	1	0	214 =	1	1	0	1	0	1	1	0
199 =	1	1	0	0	0	1	1	1	215 =	1	1	0	1	0	1	1	1
UNASSIGNED									UNASSIGNED								
200 =	1	1	0	0	1	0	0	0	216 =	1	1	0	1	1	0	0	0
201 =	1	1	0	0	1	0	0	1	217 =	1	1	0	1	1	0	0	1
202 =	1	1	0	0	1	0	1	0	218 =	1	1	0	1	1	0	1	0
203 =	1	1	0	0	1	0	1	1	219 =	1	1	0	1	1	0	1	1
UNASSIGNED									UNASSIGNED								
204 =	1	1	0	0	1	1	0	0	220 =	1	1	0	1	1	1	0	0
205 =	1	1	0	0	1	1	0	1	221 =	1	1	0	1	1	1	0	1
206 =	1	1	0	0	1	1	1	0	222 =	1	1	0	1	1	1	1	0
207 =	1	1	0	0	1	1	1	1	223 =	1	1	0	1	1	1	1	1

=====================================	=====================================
UNASSIGNED	UNASSIGNED
=====================================	=====================================
Octet 1 1 2 3 4 5 6 7 8	Octet 1 1 2 3 4 5 6 7 8
Octet 2 9 10 11 12 13 14 15 16	Octet 2 9 10 11 12 13 14 15 16
Octet 3 17 18 19 20 21 22 23 24	Octet 3 17 18 19 20 21 22 23 24
Octet 4 25 26 27 28 29 30 31 32	Octet 4 25 26 27 28 29 30 31 32
=====================================	=====================================
DEC BINARY	DEC BINARY
=====================================	=====================================
UNASSIGNED	UNASSIGNED
224 = 1 1 1 0 0 0 0 0	240 = 1 1 1 1 0 0 0 0
225 = 1 1 1 0 0 0 0 1	241 = 1 1 1 1 0 0 0 1
226 = 1 1 1 0 0 0 1 0	242 = 1 1 1 1 0 0 1 0
227 = 1 1 1 0 0 0 1 1	243 = 1 1 1 1 0 0 1 1
UNASSIGNED	UNASSIGNED
228 = 1 1 1 0 0 1 0 0	244 = 1 1 1 1 0 1 0 0
229 = 1 1 1 0 0 1 0 1	245 = 1 1 1 1 0 1 0 1
230 = 1 1 1 0 0 1 1 0	246 = 1 1 1 1 0 1 1 0
231 = 1 1 1 0 0 1 1 1	247 = 1 1 1 1 0 1 1 1
UNASSIGNED	UNASSIGNED
232 = 1 1 1 0 1 0 0 0	248 = 1 1 1 1 1 0 0 0
233 = 1 1 1 0 1 0 0 1	249 = 1 1 1 1 1 0 0 1
234 = 1 1 1 0 1 0 1 0	250 = 1 1 1 1 1 0 1 0
235 = 1 1 1 0 1 0 1 1	251 = 1 1 1 1 1 0 1 1
UNASSIGNED	UNASSIGNED
236 = 1 1 1 0 1 1 0 0	252 = 1 1 1 1 1 1 0 0
237 = 1 1 1 0 1 1 0 1	253 = 1 1 1 1 1 1 0 1
238 = 1 1 1 0 1 1 1 0	254 = 1 1 1 1 1 1 1 0
239 = 1 1 1 0 1 1 1 1	N/A 255 = 1 1 1 1 1 1 1 1
=====================================	=====================================

If you study the chart, you will notice some relationships:

Each group of 4 numbers has a common relationship with each other;
they all have identical bits 1-30, while each group of 16 have identical
bits 1-28, and each group of 64 has identical bits 1-26.

```
Bits 1-8 Bits 9-16 Bits 17-24 Bits 25-32
00101111 01000110  10110001   00000001         equals
   44       70        177        1

00101111 01000110  10110001   00000011         equals
   44       70        177        3
```

You will notice that the first 30 bits are identical.
So, to set up a cluster route to this group, the command would be

ipr 44.70.177.1/30 + 0 (gateway ip number)

I route all packets to N8YDT's users this way (my jnos is on a diode matrix)

JNOS:
route add [44.70.177.128]/27 ax0 [44.70.177.3]
(.3 is my 440 port to n8ydt)

X1J:
ipr 44.70.177.128/27 + 0 44.70.177.36
(n8ydt is .36)

All the IP numbers from 44.70.177.128 to 44.70.177.159 have the same
first 27 bits. If I had set it for 28 bits, 144 to 159 would not have
been included in the route, since their 28th bit is a 1 instead of 0.

Hope this clears up a few questions about subnetting. If not for the
help of N8PTT, I would have struggled a long time with the 8 X1J's in
the system!

73 de Steve, N8IVX
CLEDO Network Manager

```
                              \|/
            73 de Steve:      (o o)     CLEDO Network Operations Center!
|-------------------------------(_)-------------------------------------|
| AMPRnet    | n8ivx.ampr.org ||SMTP Mail|     n8ivx@n8ivx.ampr.org     |
| IP Address |  44.70.177.32  ||PBBS Mail|N8IVX@N8IVX.#NWOH.OH.USA.NOAM |
| Phone      | (419) 483-2618 || e-mail  | 102413.410@compuserve.com    |
|-------------------------------------------------------------------------|
```

88. Notes from the moderator

From: NETSIG Moderator <netsig-m@tapr.org>
Date: Sun, 22 Oct 1995 08:40:42 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951022082031.23812B-100000@sys1.tapr.org>
Rendered body type: text/plain

On Sat, 21 Oct 1995 listproc@tapr.org sampson@icon.net (Steve Sampson)
wrote:

<headers, etc. deleted>

> Sorry for the duplicate messages to the group. I figured after two days
> they probably didn't pass the moderators taste test, so I cleaned them
> up.   Guess it's just delayed for a later time zone :-)

<technical content appears in a following message>

I was planning to post a Moderator's update message this morning, but
Steve provided me with a good segway...

First, apologies to the list. Moderation hasn't been as good as it
should have been over the last month. When I accepted the moderation
job, I had good access from work, and good access from home. Both were
impacted about a month ago- new job at work, rendering me modemless there
(about to be corrected, though) and we experienced a minor flood at our
house, rendering my PC with the fast modem inoperative for a time. I was
moderating netsig from a laptop with a 2400 modem- it got heavy there for
a while, but it's certainly been interesting.

Not to mention that life in general is busy, and it's not always been
possible to arrange coverage of NetSIG, so there is sometimes a days delay.

I'm happy to say that the only posts I've rejected over the last couple
of months have had to do things like "subscribe", and one subscriber
yesterday whose mailing system was tacking on what looked like a 2k or so
binary footer, which HE found interesting, since he didn't know.

My purpose as moderator was to put a stop to the bickering and flaming.
That's been accomplished- I'm not competent to comment on some of what's
discussed, much less decide on the technical merits of the posting...
EVEN IF I was inclined to do so, which I (and the other moderators) are
most decidedly NOT.

Occaisonally some of your mail systems begin rejecting your mail.
Occaisonal problems happen, and are expected. But when every single post
to an address is bounced back, over a period of several days, I'm forced
to do an administrative unsubscribe to keep the rejected mail to a
manageable level. This happened today with an America Online user, whose
"mailbox" is apparently "full".

I now return you the excellent technical content of NetSIG.

Steve Stroh N8GNJ
strohs@halcyon.com

89. Re: [NETSIG:2073] X1J version 4 Experiments

From: wpenney@ATCON.COM (Wilson Penney)
Date: Sat, 21 Oct 1995 18:39:48 -0300
To: netsig@tapr.org
Message-ID: <199510212114.SAA32259@loki.atcon.com>
Rendered body type: text/plain

>   Hi Guys, I have made 2 new e-proms with X1J-4 on them. They will not
>go to where they will be used until spring next. So I decided to fire one up
>and use it as a test bed to learn how the node works. It is on the air now
>and has gathered some nodes and like that.
>
>   I just tried to connect to the node but I was refused! 30 minutes
>ago while the tnc was still connected to my XT computer I connected just
>fine. I expect I didn't do a proper "good bye" to the node and it's not

>letting anyone connect. This is going to be a good thing to know....when a
>node is left on a 10,000 foot mountain in this state it is the worst
>possible problem!
>
>   Anyway I will check out everything I can and give a "aftermarket"
>report on performance as a node and IP router.
>
>   ps: It sure takes forever to make a 512kb e-prom in the "Normal" mode.
>
>Karl F. Larsen -------------- k5di@acca.nmsu.edu -------------------------->
>
>
Karl.. We installed X1JR4 into the LAN and Westside of a BACKBONE node and
did not notice any problems..It was on test for about a month. After the
test peroid we decided to install the version into four other LAN nodes and
three other
BACKBONE nodes. We had nothing but problems.
One of our sites is app 100 km from home and on a hill app 900m and only way
to get there is with a 4 wheel drive.
One thing we noticed at one of our B/B nodes was when we connect the laptop
to the rs-232 port and tried to connect to the other side of the B/B 90km
away we would not see the connect message on the laptop (we think the the
connection got made because there was only one burst of 9.6k that came back
) If we tried U (users) n (nodes) r (routes) we again heard the 9.6k burst
but nothing on the laptop.WHY????? I don't know.
We are using NEDA suggested PARMS and MODEs for the LAN's and the BACKBONES
(#DPPL)Point-to-point.
We are now in the process of going back to X1JR2 at all LAN's and B/B's.
At one site app 300km away from here the SYSOP reported that when version 4
was installed the FBB BBS would not connect sometimes and he had problems
forwarding traffic..when he reverted back to version 2 all was ok again.
I do not know why version 4 gave us all the problems but version 2 worked great.
For information purposes:
LAN's are using MFJ 1270b or MFJ1274
B/B   are using Packcom MK2 with G3RUH 9.6k modem's
Diode Matrix cables are used to connect the LAN's to the B/B TNC's.
I burn all the EPROM's for the system and when burning I always do a COMPARE
to make sure the EPROM agrees with the X1J files.

PS: The WEB site for NEDA values if you need it is:
http://www.cam.org/~dino/neda/nedaparms.html
Hope this is of some help to you.
73 de VO1BK

90. Re: [NETSIG:2067] X1J question

From: wpenney@ATCON.COM (Wilson Penney)
Date: Sat, 21 Oct 1995 18:58:41 -0300
To: netsig@tapr.org
Message-ID: <199510212132.SAA05424@loki.atcon.com>
Rendered body type: text/plain

>While we are hot and heavy on X1J node functions, what is the PURPOSE of
the broadcast
>address? What does it specifically do and what are it's applications?
>
>73 de Jack
>
The purpose of the broadcast is to say <<<HELLO>>> to another node telling
the neighbour node the your node is there.
Each time a nodes broadcast is received , all nodes that are included in the
broadcast are updated.
Each time this node makes a node broadcast the obsolescence values for all
stored node listings are decremented by 1. Each node listing whose
obsolescence value is decremented from 1 to 0 is removed from the routing table.
Last part taken from NEDA magazine page 52 NEDA ANNUAL VOLUME 4 REVISED
March 15 1993
Hope that is of some help
73 de VO1BK

91. Re: [NETSIG:2075] Re: ssampson (X1J2 Node_IP_how_to)

From: ssampson@icon.net (Steve Sampson)
Date: Sat, 21 Oct 1995 18:55:40 -0500
To: netsig@tapr.org
Cc: shawnpat@sierra.net
Message-ID: <199510220022.TAA29420@ns2.icon.net>
Rendered body type: text/plain

Sorry for the duplicate messages to the group. I figured after two days
they probably

didn't pass the moderators taste test, so I cleaned them up. Guess it's
just delayed
for a later time zone :-)

>>>   We use nothing but Data Gram. I have never figured out why I wanted
>>>Virtual Circuit. Hope to learn some time...
>>
>>Datagram is for a closed trunk. Any chance of interference (highly likely on
>>many RF channels) must be thwarted. If the interference is light to non-
>>existant, than the overhead of AX.25 connected mode is not needed. If the
>>path quality is below 90%, then you may want to start using connected mode.
>>But keep it aggressive. Bang the other node into submission.

>Steve, could you provide some more information on this? From the above
>I read that DG is a *send it and it will surely be received* type of
>protocall, and VC makes a verified connection before passing the data.
>Is this correct?

>If so, then it looks like DG would be best used on an exclusive frequency
>path (if at all) or on a single hardwired connection. Then conversly
>VC would be the better choice for radio links, or multiple-paths.

DG works well on ethernet because every node hears every other node.
It even works well on RF links. I used to run a link between my Gracilis
9600 PackeTwin and KB0QJ's PackeTwin. We tried VC for awhile, got the
feel of it I guess, then switched to DG. DG was oodles faster. We were also
the only two people on the frequency. So yes, I would highly recommend
it for that use. As soon as you throw another Node into the picture, however,
it gets complicated. Now you are relying on a higher level protocol (like TCP
to ensure a packet makes it all the way through the link).

Again, if you are talking about one or two hops, then TCP will probably handle
the dropped packets in a timely fashion. Say Node #1 sends a packet to
Node #3. After receiving a packet earlier, Node #3 times out and says "Hey,
I'm Waiting!" Node #2 missed it. Now here's wher it gets complicated (even
at three hops), Node #2 misses the "I'm Waiting!" packet from Node #3.

There are numerous trees to follow about this kind of deterioration, but I can
guarantee that the resulting link performance will drop rather quickly using
pure datagram with multi-node frequencies.

The alternative is to ensure packet transfer Node-to-Node. Netrom and Rose
use this method. I've heard of several Ham wars over this DG/VC thing, but I
can assure you that in real life, it doesn't make a difference (real life being
the commercial networks). My previous computer job had both an X.25 link,
and two Internet links. As far as I could tell they both worked the same speed
(fast!). At 1.2kbps however, you start to notice these little protocol
differences.
It irks some that one of the Nodes says "Here's one..." and the other says
"Got it!" It's like a slow driver in the left lane. But the total trip
time is almost
the same (minutes for drivers, seconds for packets).

Given that the end-to-end times don't vary that much, I would almost always go
VC over RF, and DG over wire. If I had three X-1 Nodes tied together, they
would
positively be running DG between each other on the diode matrix. They would
also be VC on the RF side. (I would also probably turn off the Netrom part
of the
software, but I digress).

Figure out the processing time of your neighbor node. You can't just plug
numbers
in here. Spend five minutes and work it out. For example, there is a BBS
here in
OKC that has a 20 second processing time (beats me, guess it's an old XT).
It would
do no good to have a T1 timer (FRACK) of 1 sec here. You can bang this node
until
you turn blue, it won't go any faster. But another X-1 can process that
packet and ACK
it much faster than that. Now given an example of two JNOS boxes that are
five hops
from each other, plus the fact that JNOS is so polite, you will see the TCP
level of
protocol back off to very long delays. Throw in the fact that there are
more than two
nodes at every hop, and you get what we have in most cities--slow packet
transfer.

I'm getting long winded here, suffice to say that you want to set your FRACK
to as fast
as the Nodes will go. If Node #2 misses a packet, then it's going to get
banged again
in very short order. You don't want to wait for the TCP timer, believe me.

--
Steve/n5owk

92. Re: [NETSIG:2065] Re: X1J2 Node_IP_how_to.

From: mbtindor@cris.com (Michael Tindor)
Date: Sat, 21 Oct 95 21:01:56 EDT
To: netsig@tapr.org
Message-ID: <199510220103.VAA16738@deathstar.cris.com>
Rendered body type: text/plain

On Sat, 21 Oct 1995 13:16:13 -0500 you wrote:

>
>What is the problem with IP coordination out there in Western PA?
>
Did I stir up a hornet's nest of sorts?

>Is it a problem of knowing who to contact? Lack of response?
>
lack of response is the main thing. I am not in WPA but am on the border and I know of a LOT of guys
who have tried to get IPs in the past and ewre either unsucessful after a few months of nagging for them
 (I know Bob is a busy guy), or they just gave up. I do not know N3CVL the coordinator for WPA but have
 written him in the past concerning IPs for some users over in WPA.

Let me say first Doug that N3CVL responded quickly this time around to the two groups of guys who asked
for IPs.

Here is what seems to be the scoop:

I have been told (not firsthand) that Bob is a big advocate (and may an initiator?) of dynamic IP
allocation. And most of the guys I talk to are in the area where a subnet is already covering them.
The problem is, the maintainer of that subnet (who also issues out those certain IPs in that subnet and
then updates Bob Hoffman) wanted to do dynamic IP allocation. The problem with this is/was that he had
nothing up on the air most of the time, nothing 24-hours a day, and really no services of any
kind....yet he was feeling like these guys should wait till he gets a system on the air to start
dynamically issuing IP addresses since he did not already have a station on. Lets face it, new guys to
TCPIP aren't going to hang around if there is nobody to help them out and respond to their
questions...and especially to get the one thing that is necessary to communicate with JNOS etc over the
radio and be able to telnet, etc.

But it appears that Bob sees this and has issued appropriate addresses (that are in a block of random
stuff I guess and not really subnet-oriented stuff).

Anyway, I hope you nderstand what the problem was they were having over there (they as in the groups of
guys I know who were trying to get IPs).

>I am the coordinator for EPA and hopefully I do not have those problems here.
>I assigned subnets for the region and sub-coordinators who then report to
>me. It is very difficult at best to coordinate an area as large a half the
>state of Pennsylvania. Some of thes areas are very rural. You get a single or
>maybe a couple of guys out there in the sticks who want an address. They have
>no understanding of what to do with it once they get it plus the fact that
>there is no path to anywhere useful.
>
>I am an advocate of IP and we have a very successful network in South Eastern
>Pennsylvania and Southern New Jersey. Getting this to the remote areas can be
>a challenge as well as regular ax25 or netrom.
>
>Doug
>
>

93. Re: [NETSIG:2065] Re: X1J2 Node_IP_how_to.

From: mbtindor@cris.com (Michael Tindor)
Date: Sat, 21 Oct 95 21:01:56 EDT
To: netsig@tapr.org
Message-ID: <199510220103.VAA16780@deathstar.cris.com>
Rendered body type: text/plain

On Sat, 21 Oct 1995 13:16:13 -0500 you wrote:

>
>What is the problem with IP coordination out there in Western PA?
>
Did I stir up a hornet's nest of sorts?

>Is it a problem of knowing who to contact? Lack of response?
>
lack of response is the main thing. I am not in WPA but am on the border and I know of a LOT of guys who have tried to get IPs in the past and ewre either unsucessful after a few months of nagging for them (I know Bob is a busy guy), or they just gave up. I do not know N3CVL the coordinator for WPA but have written him in the past concerning IPs for some users over in WPA.

Let me say first Doug that N3CVL responded quickly this time around to the two groups of guys who asked for IPs.

Here is what seems to be the scoop:

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But it appears that Bob sees this and has issued appropriate addresses (that are in a block of random stuff I guess and not really subnet-oriented stuff).

Anyway, I hope you nderstand what the problem was they were having over there (they as in the groups of guys I know who were trying to get IPs).

>I am the coordinator for EPA and hopefully I do not have those problems here.
>I assigned subnets for the region and sub-coordinators who then report to
>me. It is very difficult at best to coordinate an area as large a half the
>state of Pennsylvania. Some of thes areas are very rural. You get a single or
>maybe a couple of guys out there in the sticks who want an address. They have
>no understanding of what to do with it once they get it plus the fact that
>there is no path to anywhere useful.
>
>I am an advocate of IP and we have a very successful network in South Eastern
>Pennsylvania and Southern New Jersey. Getting this to the remote areas can be
>a challenge as well as regular ax25 or netrom.
>
>Doug
>
>

94. Re: [NETSIG:2079] Re: Closed backbones (was Re: ACL On X1J-4)

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Sat, 21 Oct 1995 20:28:13 -0500
To: netsig@tapr.org
Message-ID: <199510220128.UAA03861@sys1.tapr.org>
Rendered body type: text/plain

>>   Should users be able to downlink from backbone nodes? Should servers be
>>on the backbone at all? If not, by what alternate means do they access the
>>backbone for high volume data transfers (compressed message forwarding and
>>the like)?

[SNIP!]

One aspect of users on backbones that hasn't been covered here are those that go out and map the network. There once was a time that I published a network node map covering the Rocky Mtn region from the Mexican border to the Canadian border.

The procedure to do this is to connect from node to node analyzing routing information (from the ROUTES command).   From this, one is able to determine which were the 'strong' routes and to develop a map that's reasonably accurate. As time went on and more and more NodeOps started locking down their portions of the network, it became impossible to map a region in this manner.

Here in Arizona after one of the NodeOps became aware of NEDA's policy of no connect on the backbones, this was carried to extremes. Not only did he

disable the CONNECT command on his backbone, he apparently decided if a
little lockdown was good, more was better. He disabled the HEARD function
so users could get no clue as to backbone channel activity by "friendlies".
He then tuned the NODES broadcasts so only HIS nodes would filter into the
southeastern part of the state. Essentially the network turned into a
one-way path which facilitated only his BBS forwarding.

I'm not here to say he doesn't have a 'right' to take these actions. After
all it IS his equipment. I would suggest tho that in view of the damage
done to the growth of packet in this area because of his lock-out policy,
that other NodeOps carefully consider the consequences before they take
similar action.

If one is concerned about discouraging backbone trunk non-network RF
activity, the present day nodeware is reasonably sophisticated to do this
without playing with the connect function. Another technique to impliment
this goal was successfully done years ago on the east coast trunk. Here I'm
told, they simply altered the baud rate slightly so that "stock" modems
wouldn't work on the channel.

73 de Jack

95. Re: Coordinators who don't

From: shawnpat@sierra.net
Date: Sun, 22 Oct 1995 06:55:45 -0700
To: netsig@tapr.org
Message-ID: <199510220655.AA24919@diamond.sierra.net>
Rendered body type: text/plain

Steve Sampson wrote:

>2. Don't use his numbers. Contact another coordinator and get addresses from
>him. They
>   don't have to be "in state" numbers.

> You can also use any address you
>want on most
>   packet radio networks, as they are almost never connected to other IP
>networks. In
>   this case I recommend the 10.x.x.x numbers. Also there is a group of
>44.x.x.x numbers
>   that are not assigned to any state. You could also use the space IP's. Get
>   creative here. Once the coordinator sees you having fun in spite of him,
>he'll offer
>   more addresses, or remain a fool.

Whoa! Steve I can agree with the first half of your post, and even the
fisrt half of the part above. But to invite indescriminate address usage,
even into duplicating existing address assignments, will only lead to
CB chaos. The addressing system was set up with the FUTURE very strongly
in mind. To take an existing (and working) standard and to advocate
going against it is wrong!

Some one who has a personal LAN going and who never intends to link it
with Inet or AMPRnet (or any other net that does plan to link) could
certainly (and should) set up their own addresses. Making their own
addresses and not taking from the assigned pool will leave more available
in the limited pool.

The future I am talking about here is where the AMPRnet (44.x.x.x) will
be connected to the Inet at multiple points. This is allready reality
in a lot of cases. So JA5VRQ sends a message to AL3TTY. The messsage
may travel via the Inet a couple of hops and via the AMPRnet for the
most part. What happens when some one along the way has re-used an
assigned address...? Message gets lost!

>on most packet radio networks, as they are almost never connected
>to other IP networks.

I don't see this as a true statement.

73 de Shawn, N7XBM.

96. Re: N5OWK-2 (X1J2 Node_IP_how_to)

From: shawnpat@sierra.net
Date: Sun, 22 Oct 1995 06:55:52 -0700
To: netsig@tapr.org
Message-ID: <199510220655.AA24935@diamond.sierra.net>

Rendered body type: text/plain

>I'm getting long winded here, suffice to say that you want to set your FRACK
>to as fast
>as the Nodes will go. If Node #2 misses a packet, then it's going to get
>banged again
>in very short order. You don't want to wait for the TCP timer, believe me.
>
>--
>Steve/n5owk

Thank you for the clarification. It helped to cement some other
concepts together.

73 de Shawn, N7XBM.

97. Re: [NETSIG:2067] X1J question

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 22 Oct 1995 04:32:15 -0600
To: netsig@tapr.org
Message-ID: <199510221032.EAA18926@acca.nmsu.edu>
Rendered body type: text/plain

At 01:23 PM 10/21/95 -0500, you wrote:
>While we are hot and heavy on X1J node functions, what is the PURPOSE of
the broadcast
>address? What does it specifically do and what are it's applications?
>
>73 de Jack
>

        It can and should be used as an aid to subnet implimentation. It
limits the range of ip address that will be passed.

        And it is complex how it works. It passes each ip number in binary
form through the mask and if it does it sends the address out.

        Unless you understand subnet set it to 255.255.255.255 abd
everything will work.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

98. Re: Reliability vs. performance.

From: jthisdal@q.continuum.net (Jim Thisdale)
Date: Sun, 22 Oct 1995 10:04:16
To: netsig@tapr.org
Cc: jthisdal@q.continuum.net
Message-ID: <jthisdal.153.000A126E@q.continuum.net>
Rendered body type: text/plain

>I don't understand this? Unless the BBS operator has a persist or DWAIT
>set improperly it should share the channel. Maybe the BBS op's need to
>be alittle less aggressive. Forwarding is rather low priority in the
>scheme of things. I have had complaints of this at times here also on
>a TCP/IP channel with a BBS forwarding traffic. I suspect that the BBS
>op needs to lower his persist.

Around here, many of the local bbs's run msys software and somekind of
nodestuff.
One big problem occurs when the channel gets a little busy, that is the bbs
seems to keep sending repeated packets to it's tnc which can't send anything
until the channel clears up, when it finally gets a spot to transmit it send
out many packets at once and in there is about 8 retries and a disconnect to
the user. seems the bbs software needs to be smarter, so as not to retry out a
user just because it's tnc hasn't sent out the packets yet.

Comparatively speaking from a users stand point the F6FBB software is much
faster than MSYS even when your the only user on the channel.

Packet repeaters are about only way to 'equalize' the playing field for those
hidden transmitters, this really helps reduce the retries due to collisions.
Too bad that all the 2 meter pairs are used up.

73 de Jim, n1jmm

99. Re: [NETSIG:2067] X1J question

From: ssampson@icon.net (Steve Sampson)
Date: Sun, 22 Oct 1995 10:09:50 -0500
To: netsig@tapr.org
Cc: Jtaylor@usacec-osigw.army.mil
Message-ID: <199510221536.KAA05852@ns2.icon.net>
Rendered body type: text/plain

>While we are hot and heavy on X1J node functions, what is the PURPOSE of
the broadcast
>address? What does it specifically do and what are it's applications?

I haven't read the RFC on this for awhile, but I think you can assume that
it is not used
in packet.

Supposedly, by subnetting your leg of the network (say 44.77.x.x) you could send
broadcasts to all machines, and these broadcasts would not flow over to the
other
subnets. The two configuration options are the netmask and broadcast options.
Here the netmask (255.255.0.0) along with the broadcast (44.77.255.255) would
act to keep these broadcasts within the subnet.

Applications that work by broadcast would be fascilitated by this. Let me
put on my
dream cap -- how about a message to all nodes that an earthquake has destroyed
Los Angeles (we can only hope) and for all citizens to bring their shovels.
You get
the idea, stuff where all nodes can use alarms, or one computer can send data to
all nodes in its leg. This also assumes one-way traffic I suppose. Can't
very well
ACK a broadcast, when every node would be ACK'ing.

--
Steve/n5owk

100. Gracilis Packe Ten

From: KN6UO@aol.com
Date: Sun, 22 Oct 1995 17:24:43 -0400
To: netsig@tapr.org
Message-ID: <951022172441_51260921@mail02.mail.aol.com>
Rendered body type: text/plain

Hi All

I have been trying, unsuccessfully, to get information on the Gracilis Packe
Ten from Gracilis. I know that there are some in use out there. Are they
worth the money and trouble of trying to get information on? I have called
there phone number (708)801-8800 and all I get is an answering machine. I
lave left many!!! messages with no sign that anyone ever listens to my
messages. I have sent a couple of messages to there E-Mail:
info@gracilis.com   automated information server(or so it is supose to be)
with no response. For now I have given up on trying to contact Gracilis
direct, and am trying this route. Is there anyone on this list that can give
me detailed information on the Gracilis Packe Ten packet switch? What
exactly are the differences and advantages/disadvantages of each of the
versions of the switch? Have you found that the switch is the Rolls Royce of
packet switches and worth the money? If so, then HOW IN THE WORLD DOES
SOMEONE GET IN CONTACT WITH GRACILIS to order, get specs, ect..?

I look forward to any information on this subject

73
Kevin

101. Re: [NETSIG:2094] Gracilis Packe Ten

From: ssampson@icon.net (Steve Sampson)
Date: Sun, 22 Oct 1995 19:09:48 -0500
To: netsig@tapr.org
Cc: KN6UO@aol.com
Message-ID: <199510230037.TAA09024@ns2.icon.net>
Rendered body type: text/plain

>I have been trying, unsuccessfully, to get information on the Gracilis Packe
>Ten from Gracilis.

I hear PacComm is selling the Gracilis stuff now. Try them.

Gracilis suffered from the same problem many start-ups do:
The technical people trying to be sales and marketing. If they
haven't totally gone under by now, then I'm sure PacComm will

be a great boon to their goals. I got rid of my stuff as fast as I
could, when after 2 years all their promises never materialized.

There's nothing wrong with the equipment, there just wasn't any
support. Now they can do the hardware, and others can do the
marketing, sales, and software. Hopefully...

102. Re: [NETSIG:2094] Gracilis Packe Ten

From: Dave Zeph <zephd@iquest.net>
Date: Mon, 23 Oct 1995 01:40:21 +0000
To: netsig@tapr.org
Message-ID: <m0t7AwD-00036KC@dorite1.iquest.net>
Rendered body type: text/plain

At 18:24 22/10/95 -0500, you wrote:
>
>I look forward to any information on this subject
>
>73
>Kevin
>
Kevin ..... Gracillis sold the rights for the PacketTen to:

PacComm Packet Radio Systems
4413 North Hesperides Street
Tampa, FL 33614

Their numbers are:

(800) 486-7388 (Orders)
(813) 874-2980 (Questions / Switchboard)
(813) 872-8696 (FAX)
(813) 874-3078 (BBS)

73 ---> Dave

****
Dave Zeph, W9ZRX
Home   : (317) 896-3876
FAX/Data : (317) 867-1809
E-Mail   : zephd@iquest.net

103. Re: [NETSIG:2083] Re: X1J version 4 Experiments

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sun, 22 Oct 1995 22:38:32 -0300
To: netsig@tapr.org
Message-ID: <199510230138.WAA07069@bud.peinet.pe.ca>
Rendered body type: text/plain

>>
>Karl.. We installed X1JR4 into the LAN and Westside of a BACKBONE node and
>did not notice any problems..It was on test for about a month. After the
>test peroid we decided to install the version into four other LAN nodes and
>three other
>BACKBONE nodes. We had nothing but problems.
>One of our sites is app 100 km from home and on a hill app 900m and only way
>to get there is with a 4 wheel drive.
>One thing we noticed at one of our B/B nodes was when we connect the laptop
>to the rs-232 port and tried to connect to the other side of the B/B 90km
>away we would not see the connect message on the laptop (we think the the
>connection got made because there was only one burst of 9.6k that came back
>) If we tried U (users) n (nodes) r (routes) we again heard the 9.6k burst
>but nothing on the laptop.WHY????? I don't know.
>We are using NEDA suggested PARMS and MODEs for the LAN's and the BACKBONES
>(#DPPL)Point-to-point.
>We are now in the process of going back to X1JR2 at all LAN's and B/B's.
>At one site app 300km away from here the SYSOP reported that when version 4
>was installed the FBB BBS would not connect sometimes and he had problems
>forwarding traffic..when he reverted back to version 2 all was ok again.
>I do not know why version 4 gave us all the problems but version 2 worked
great.
>For information purposes:
>LAN's are using MFJ 1270b or MFJ1274
>B/B   are using Packcom MK2 with G3RUH 9.6k modem's
>Diode Matrix cables are used to connect the LAN's to the B/B TNC's.
>I burn all the EPROM's for the system and when burning I always do a COMPARE
>to make sure the EPROM agrees with the X1J files.
>
>PS: The WEB site for NEDA values if you need it is:

>http://www.cam.org/~dino/neda/nedaparms.html
>Hope this is of some help to you.
>73 de VO1BK
>
>
Well I have X1J4 on 2 back-bone nodes and 1 LAN node at different sites. All
work great with FBB fwding and as well 2 X1J4's are matrixed to the back-end
of my FBB BBS.
The parms we use are similar to NEDA but not quite as strict.
You connect problem did not give enough information, it may be a routing
problem.
I have recently activated the Router on the LAN node and it works great with
JNOS TCP.
73 - Ron VE1AIC

104. Re: [NETSIG:2073] X1J version 4 Experiments

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)
Date: Sun, 22 Oct 95 21:31:07 CST
To: netsig@tapr.org
Message-ID: <23790@k0vm.ampr.org>
Rendered body type: text/plain

In message <199510200012.SAA12807@acca.nmsu.edu> netsig@tapr.org writes:
>   Hi Guys, I have made 2 new e-proms with X1J-4 on them. They will not
> go to where they will be used until spring next. So I decided to fire one up
> and use it as a test bed to learn how the node works. It is on the air now
> and has gathered some nodes and like that.
>
>   I just tried to connect to the node but I was refused! 30 minutes
> ago while the tnc was still connected to my XT computer I connected just
> fine. I expect I didn't do a proper "good bye" to the node and it's not
> letting anyone connect. This is going to be a good thing to know....when a
> node is left on a 10,000 foot mountain in this state it is the worst
> possible problem!
>
>   Anyway I will check out everything I can and give a "aftermarket"
> report on performance as a node and IP router.
>
Karl,
  I have had 4 pair of x1j4 nodes (2 nodes per site, 4 sites)
on the air for several months
and have had no problems (that I know of). We do have them
configured to do ip routing which does work in our area..
although there has been little use made of the ip routing function
so far.. (not much ip on the other end of the network to talk to.
)

  You might want to see if there is any relationship to the 'L1
FLush' in the last line of 'status' and your connect problem..
'L1 flush's should normally stay at Zero... You may need to turn
off rs232 node braodcasts to stop the 'L1 flush'ing (set mode 4 to
1) while you have the x1j4 in a standalone situation.
(dont for get to set mode 4 back to 3 when you put it into a node
stack)

>   ps: It sure takes forever to make a 512kb e-prom in the "Normal" mode.
>
> Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
>
>
-73- AL -----------+-------------------------------------+
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |
--------------------+ internet : al@ia.net   -------------+

105. Re: IP Broadcast (X1J question)

From: shawnpat@sierra.net
Date: Mon, 23 Oct 1995 04:24:16 -0700
To: netsig@tapr.org
Message-ID: <199510230423.AA03136@diamond.sierra.net>
Rendered body type: text/plain

>>While we are hot and heavy on X1J node functions, what is the PURPOSE of
>the broadcast
>>address? What does it specifically do and what are it's applications?
>>73 de Jack

>   It can and should be used as an aid to subnet implimentation. It

```
>        limits the range of ip address that will be passed.
>        And it is complex how it works. It passes each ip number in binary
>        form through the mask and if it does it sends the address out.
>        Unless you understand subnet set it to 255.255.255.255 abd
>        everything will work.
>Karl F. Larsen -------------- k5di@acca.nmsu.edu -------------------------->

Per the X1J4 docs, this is the blerb I found:

>So to set the node IP broadcast address to that used over here,
>the command would be :
>                  IPBROADCAST 44.131.0.0 (United Kingdom IP series)
>The IPADDRESS is the address that the node will respond to.
>It is used only as detailed in section 7. The IP broadcast address
>is the one used to denote broadcast packets that will be largely
>ignored.  Note that port addressing is NOT currently supported.

So with a setting of IPbroadcast 44.125.131.127, which portion of
the 4th octet gets ignored, 1-127 or 128-255 ?

Also what exactly is the result of a non-ignore?  The node broadcasts
the address (if so, for what purpose)?  Is this a type of broadcast
from the node or is it a broadcast origionated from elsewhere?

73 de Shawn, N7XBM.
```

106. Re: Subnetting (X1J2 Node_IP)

```
From: shawnpat@sierra.net
Date: Mon, 23 Oct 1995 04:24:19 -0700
To: netsig@tapr.org
Message-ID: <199510230423.AA03146@diamond.sierra.net>
Rendered body type: text/plain
```

```
Steve, N8IVX wrote:
>     For those who still have trouble with subnetting, this is how I set
>our network up...

Outstanding Steve.  Thanks for this.

For those who have a bit of trouble understanding Steve's post
(as I did when I saw something similar a year ago or so) and who
have been following the thread X1J2_Node_IP_how_to, let me add
a few clarifying (I hope) points.

1. The IP address is sub-divided by groups called Octets.
   44.125.131.28 sub-divides into 44 as the first octet, 125 is the
   second, 131 is the third and 28 is the fourth.

2. In the IP address world, each octet can be any number from 1 - 255.
   Zero is not used (or reserved).

3. Each octet can be sub-divided into it's binary-bits.
   With the bit-location label running left to right.

So putting that all together we have:
Bits 1-8   Bits 9-16   Bits 17-24   Bits 25-32
00101100   01111101    10000011     00011100
   44        125          131          28
octet 1    octet 2     octet 3      octet 4

Looking at Steve's bit-location_of_IPaddress (subnet) table, I see that
this portion is showing only the 4th octet for each of the entries
(call signs).  The rest of the tables show the other octets as needed.

|====================================|====================================|
|       BELLEVUE X1J SWITCHES        |       WOODVILLE X1J SWITCHES       |
|------------------------------------|------------------------------------|
|N/A       0 =  0  0  0  0  0  0  0  0 |N8UWS-1  16 =  0  0  0  1  0  0  0  0 |
|N8IVX-1   1 =  0  0  0  0  0  0  0  1 |         17 =  0  0  0  1  0  0  0  1 |
|N8IVX-2   2 =  0  0  0  0  0  0  1  0 |         18 =  0  0  0  1  0  0  1  0 |
|N8IVX-3   3 =  0  0  0  0  0  0  1  1 |         19 =  0  0  0  1  0  0  1  1 |
|------------------------------------|------------------------------------|
|Octet 4       25 26 27 28 29 30 31 32 |Octet 4       25 26 27 28 29 30 31 32 |


So the IProutes for all destinations for bellevue (using the above table)
would have a length entry of 30 and destination entry of x.x.x.1  .
For an entry only to IVX-2 and -3 would be length 31 and a destination
entry of x.x.x.2 .
```

HTH.

73 de Shawn, N7XBM.

107. [NETSIG:2088] Re: Closed backbones (was Re: ACL On X1J-4)

From: djm@phx-az.com (Daniel Meredith)
Date: Mon, 23 Oct 1995 03:58:00 GMT
To: netsig@tapr.org
Message-ID: <95102221185511@phx-az.com>
Rendered body type: text/plain

JT>Here in Arizona after one of the NodeOps became aware of NEDA's policy of no
JT>connect on the backbones, this was carried to extremes. Not only did he
JT>disable the CONNECT command on his backbone, he apparently decided if a
JT>little lockdown was good, more was better. He disabled the HEARD function
JT>so users could get no clue as to backbone channel activity by "friendlies".
JT>He then tuned the NODES broadcasts so only HIS nodes would filter into the
JT>southeastern part of the state. Essentially the network turned into a
JT>one-way path which facilitated only his BBS forwarding.

Jack has some good points here, however he is making his own judgements
on the reasonings behind the changes on the network he speaks of. The
connect command on the backbone TNC's was disabled because of those
uplinking on the backbone itself, and altering the baud rate is not an
option here as Jack suggests, in fact it is not practical when dealing
with a variety of modems on the channel. A heard list isn't necessary
on a backbone, so this comment has no relevance. The comment about the
nodes broadcast being filtered is because of the INTERNET Gateway. It
was specifically requested by the neighboring networks that they not
receive the umpteen amount of nodes that are broadcast out from the
gateway. So in order to accomplish this, each node that is a neighbor
to another network only broadcasts itself. This way there is NO IMPACT
to either network and each can co-exist. The users simply connect to
the node that links the two networks and bang they are there. When one
is at 9600 baud, it makes little to no difference.

JT>I'm not here to say he doesn't have a 'right' to take these actions. After
JT>all it IS his equipment. I would suggest tho that in view of the damage
JT>done to the growth of packet in this area because of his lock-out policy,
JT>that other NodeOps carefully consider the consequences before they take
JT>similar action.

There actually has been tremendous growth in the area of packet in the
area that Jack speaks of, there are several new TCP/IP stations popping
up and new frequencies are being coordinated regularly. There are NO
lock-out policies and in fact the relation between the AX.25 networks
and TCP/IP are now pretty much molded together in the Central and
Northern parts of Arizona.

It is interesting here how Jack has put forth so much effort to talk
about someone else's network, when in fact it belongs to a club that is
controlled by a board of directors, not one individual as Jack
suggests. Also if one were so concerned, he would be
getting his own network into place instead of criticizing other networks.
Jack has continued to talk the talk, but has failed to walk the walk for
over the 7 years that I have been involved in Arizona networking. In
fact TCP/IP'ers were the first to be locked out on all of his nodes and
many users also suffered at the hands of Jack and his lockout controls.
I will add that this has since changed overtime, but it is a fact as
many of us have experienced it, including when my BBS was locked out
way back when.

It is important to understand the overall need for implementing measures
to control the effectiveness of the network. In the case of Arizona,
it was necessary to place measures on the backbone to keep channel
efficiency high and good throughput and not flood our neighbors with
unwanted node lists.

Many users could care less in most cases about backbones, they are more
interested in getting to point B from point A and it is our job as
networkers to see that it can happen. It is being done and will
continue to be done as time goes on and technology allows us to bring it
to our users.

JT>If one is concerned about discouraging backbone trunk non-network RF
JT>activity, the present day nodeware is reasonably sophisticated to
dothis JT>without playing with the connect function. Another technique

to impliment JT>this goal was successfully done years ago on the east
coast trunk. Here I'm JT>told, they simply altered the baud rate
slightly so that "stock" modems JT>wouldn't work on the channel.

AS mentioned above, it simply isn't an option in a mountaintop
environment when there is more than one flavor of TNC on the system and
more than two on the frequencies, good suggestion, but not plausible.

JT>73 de Jack

Regards...

Daniel

---
 * OLXWin 1.00 * If this were an actual tagline, it would be funny.

108. GMSK Modems

From: dme@ingersoll.com (Dave Ewaldz)
Date: Sun, 22 Oct 1995 21:08:23 +0000 (GMT)
To: netsig@tapr.org
Message-ID: <m0t77d2-0001f4C@netmail>
Rendered body type: text/plain

Last week, a couple of UK hams advertised a new GMSK modem kit on the
ham-digital mailing list.
It fits a standard tnc disconnect header and supposedly works to 38.4Kbps.
It is based on some standard GMSK VLSI chipset intended for the European
cellular industry. For more info, refer to:
http://www.stack.serpukhov.su/~victor/hamradio/packet/vfast288.html

What I'm wondering is, would this modulation method be an improvement over
the K9NG scheme? They advertise the modem to be compatible with the
K9NG scheme when used at 9k6, so the scrambler must be the same.
What possible advantages would these things have?

Anyone know anything about these rascals?

73 Dave N9HKM

109. Re: [NETSIG:2083] Re: X1J version 4 Experiments

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 23 Oct 1995 06:35:44 -0600
To: netsig@tapr.org
Message-ID: <199510231235.GAA11734@acca.nmsu.edu>
Rendered body type: text/plain

At 08:59 AM 10/22/95 -0500, you wrote:
>>   Hi Guys, I have made 2 new e-proms with X1J-4 on them. They will not
>>go to where they will be used until spring next. So I decided to fire one up
>>and use it as a test bed to learn how the node works. It is on the air now
>>and has gathered some nodes and like that.
>>
>
>>
>Karl.. We installed X1JR4 into the LAN and Westside of a BACKBONE node and
>did not notice any problems..It was on test for about a month. After the
>test peroid we decided to install the version into four other LAN nodes and
>three other
>BACKBONE nodes. We had nothing but problems.

        OK but a test of about a month should have shown up the problems you
had on the REAL network...

>One of our sites is app 100 km from home and on a hill app 900m and only way
>to get there is with a 4 wheel drive.

        I have never been to a site either 100km from here or that did not
require 4 wheel low range drive....hi

>One thing we noticed at one of our B/B nodes was when we connect the laptop
>to the rs-232 port and tried to connect to the other side of the B/B 90km
>away we would not see the connect message on the laptop (we think the the
>connection got made because there was only one burst of 9.6k that came back
>) If we tried U (users) n (nodes) r (routes) we again heard the 9.6k burst
>but nothing on the laptop.WHY????? I don't know.

I don't know either but for sure that is a problem! If I connect with my little laptop and don't see the sign-on message and a connected to: message when I do a Esc and then a C, Then I assume a bad tnc or e-prom and change both. On site fixing can sometimes cure the problem but not very often.

>We are using NEDA suggested PARMS and MODEs for the LAN's and the BACKBONES
>(#DPPL)Point-to-point.
>We are now in the process of going back to X1JR2 at all LAN's and B/B's.
>At one site app 300km away from here the SYSOP reported that when version 4
>was installed the FBB BBS would not connect sometimes and he had problems
>forwarding traffic..when he reverted back to version 2 all was ok again.

I forward 400 messages a day over a x1j4 node at 9600 baud with no problems at all... I know nothing about the NEDA parms.

>I do not know why version 4 gave us all the problems but version 2 worked
great.
>For information purposes:
>LAN's are using MFJ 1270b or MFJ1274
>B/B   are using Packcom MK2 with G3RUH 9.6k modem's
>Diode Matrix cables are used to connect the LAN's to the B/B TNC's.
>I burn all the EPROM's for the system and when burning I always do a COMPARE
>to make sure the EPROM agrees with the X1J files.
>
>PS: The WEB site for NEDA values if you need it is:
>http://www.cam.org/~dino/neda/nedaparms.html
>Hope this is of some help to you.
>73 de VO1BK
>
>

This will be a help to others I think vo1bk...I don't use the NEDA parms but rather use the default parms that come with the node software. I change the callsign the ip node number the alias and txd if needed and like that. I use the same MFJ1274 TNC as well as the mico-power Tiny-2 from PacComm.

There are very few changes to the software from version x1j-2 and x1j-4 and there were zero changes to the TheNet version 1 software. So the BBS having a problem with x1j4 MUST be due to the setup used.

I plan to publish a set of setups that will work for a plain jane node, a backbone with only defined callsigns having access and from my and others messages get a good subnet presentation together for the IP router.

Will also test the dynamic arp update feature. That one feature is very important to making tcp/ip easy to use.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

110. Re: [NETSIG:2052] Re: K5DI (X1J2 Node_IP_how_to)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 23 Oct 1995 06:35:54 -0600
To: netsig@tapr.org
Message-ID: <199510231235.GAA11738@acca.nmsu.edu>
Rendered body type: text/plain

At 08:57 AM 10/19/95 -0500, you wrote:
>
>
>>   We use nothing but Data Gram. I have never figured out why I wanted
>>Virtual Circuit. Hope to learn some time...
>
>Here I relied on N8KHN for his input. He did some experiments using his
>gateway (Wnos, hamgate.unr.edu ??) and his net of 9k6 X1J nodes to test
>the VC vs DG and as I recall the verdict was the DG didn't allways work
>X1J to X1J very well. This has been some time ago, so I really do not
>remember (besides getting snowed by the TCP/IP lingo).
>
>
>>>There may be other minor changes that improve performance. If so I hope
>>>some one will post them here.
>
>>   Shawn this is the best I have seen. You are somehow involved with
>>the internet networking or you would not have gone this far. I hope this
>>will help others as much as it has helped me.
>
>Thank you Karl. Like I said it was not all of my making. Bill N8KHN

>has kept his ear to the ground on packet and TCP/IP far longer than I
>have been a ham. But I can say that at least to this point I do
>understand the X1J. Also when the resources come together, I too plan
>to have a gateway here and have done some study toward that end.
>
>There is currently a discussion about increasing the MTU parameter on
>the NOS-BBS mailing list. I hope that it may have a direct application
>to X1J. I'll try to pass along the outcome unless some one with better
>understanding would like to.

 Those guys often snow me at this time.

        Don't feel your alone Shawn. But I am old and have learned that when
something someone else writes looks very complex, it is often due to the
writer's lack of understanding of the subject...:)

>
>(The KA9Q NOS-BBS Mailing List: nos-bbs@hydra.carleton.ca)
>
>73 de Shawn, N7XBM.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

111. Re: [NETSIG:2083] Re: X1J version 4 Experiments

From: paul@paccomm.com (Paul Evans, W4/G4BKI)
Date: Mon, 23 Oct 95 08:46:10 UTC
To: netsig@tapr.org
Message-ID: <8400@paccomm.com>
Rendered body type: text/plain

The reason you get no response on the port MUST be that pin 9 of
your serial cable is connected to the laptop and held low.
This means that the node you are talking to is still in protocolled
mode NOT sysop mode. ALWAYS disconnect pin 9 in yur computer cable
when talking to a TheNet node.......

~~~~~~   .
Paul Evans, W4/G4BKI paul@paccomm.com |\
+(813) 874-2980   Fax:+(813) 872-8696   /| \
PacComm Packet Radio Systems   / |--\
4413 N. Hesperides St., Tampa, FL 33614-7618   / | * \
Views are personal, not those of employer   / |----\
                                                                   / | \
Don't surf the net, SAIL it!   /-----|------` |
Captain of S/V "Spindrift", Dunedin, FL.   \------`--------]
Catalina 36: Tall rig (58'), Winged Keel (4' 2")   _____________/.__.
Full batten main, Boston Whaler dinghy.   ~~~~~~~~~~~~~~~~~~~~~~~~

112. Re: [NETSIG:2075] Re: ssampson (X1J2 Node_IP_how_to)

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Mon, 23 Oct 1995 10:08:56 -0400
To: netsig@tapr.org
Message-ID: <199510231408.KAA05452@nadc.nadc.navy.mil>
Rendered body type: text/plain

Datagram acks at the IP level and we find that it works well as long as you
use the linear IP backoff with reasonable numbers. Keep in mind that this
goes against the Phil Karn rules of IP - that is linear vs exponenial backoff.
We have found though that linear properly setup works fine on a strictly IP
channel with many users. Persist needs to be set properly amoung users.

Connected mode does retry at the ax25 level as well as the IP level. This
creates more channel traffic as both must be ack'ed. For marginal circuits
or mixed circuits this is preferred. If this doe snot get thru you truely
have a bad channel!

When doing multiple pings to test a channel in connected mode the results
will be skewed because the ax25 level will force them thru. You may see
a 100% or near 100% return but have many ax25 retries.

Doug

113. Re: [NETSIG:2066] Re: Coordinators who don't

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Mon, 23 Oct 1995 10:15:47 -0400
~~~~~~

To: netsig@tapr.org
Message-ID: <199510231415.KAA08128@nadc.nadc.navy.mil>
Rendered body type: text/plain

```
>2. Don't use his numbers. Contact another coordinator and get addresses from
>him.  They
>   don be "in state" numbers.  You can also use any address you
>want on most
>   packet radio networks, as they are almost never connected to other IP
>networks.  In
>   this case I recommend the 10.x.x.x numbers.  Also there is a group of
>4Get
>   creative here.  Once the coordinator sees you having fun in spite of him,
>he'll offer
>   more addresses, or r


I would have to say this is bad advice. If you can't the IP coordinator contact
brian@ucsd.edu - he does not like to be bothered though and use this as last
resort.

IP requires a coordinated effort. You can't just put a station on the air
without support of routers and the rest of the group. SO even though you
may be tempted to "do it on your own" it is not a good idea.

Doug
```

114. Re: [NETSIG:2094] Gracilis Packe Ten

From: mark@tetherless.com (Mark Oppenheim)
Date: Mon, 23 Oct 1995 09:13:17 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199510231613.JAA15977@gorgor.pa.tetherless.com>
Rendered body type: text/plain

```
At 06:24 PM 10/22/95 -0500, KN6UO@aol.com wrote:
>Hi All
>
>I have been trying, unsuccessfully, to get information on the Gracilis Packe
>Ten from Gracilis.....

Yeah, we bought a BUNCH of their cards for a commercial project and recieved
less than minimal help on the technical side.... well over $2000.00 in hardware.

It was extremely frustrating.

Apparently PacComm has taken over from them on both the sales and technical
support side, and our experience with Gracilis (NOT PacComm!) has resulted
in us moving in another direction, and their cards now sit unused in the
corner...

Mark
```

115. New UK ham 9600 modem re:Dave N9HKM

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Mon, 23 Oct 95 12:20:09 UTC
To: netsig@tapr.org
Message-ID: <8417@paccomm.com>
Rendered body type: text/plain

```
One of our Aussie dealers has one of these units in hand.
It uses the FX-589 (sold as MX-589 in the USA) which is the same modem
in the DRSI DPK-9600, KPC-9612, and the forthcoming MFJ 1200/9600 modem.
They do the scrambling in a PIC microchip.

Thats all I heard so far - hope this is the same unit Dave was mentioning.
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Gwyn Reedy, W1BEL      gwyn@paccomm.com        W1BEL@amsat.org

+(813) 874-2980        Fax:+(813) 872-8696     BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618
```

116. Re: [NETSIG:2101] Re: Closed backbones (was Re: ACL On X1J-4)

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 23 Oct 1995 13:20:52 -0500
To: netsig@tapr.org
Message-ID: <199510231820.NAA13547@sys1.tapr.org>
Rendered body type: text/plain

I appologize to the gentle followers of this forum. It was never my intention to become a combatant with anyone, or participate in a flamefest. Suffice to say I believe a certain NodeOps personal attack upon myself is prompted by guilt and his peculiar view of actual events. :-)

However, there are some valid networking philosophys presented and it might be beneficial to openly (and hopefully dispasionately) discuss them.

On the issue of shutting down the HEARD (or MHEARD) function on backbones: How can a NodeOp determine whether or not there's any potential harm to his system, if it's not in place? Far as I know, It doesn't adversely affect node operation to leave it enabled. Don't know about anyone else, but I make it a practice to periodically check the MHEARDs on backbone trunks as a means to inform me what's happening on the frequency.

Uplinks to the backbone trunk node: As others have pointed out, this in general is not a good practice. Especially with users such as BBSes, TCPIP nodes, and DXClusters which source (place into the network) high data loads.

Sometimes lost in the packet world is that we are all people. A first approach might be to call a meeting with the state/regional/local packet coordinator and have a face-to-face with the principals involved. Quite often a simple meeting will result in satisfactory agreement about network issues.

Sometimes though, it's not possible to reach agreement. Then it's time to employ defensive tools. Not all nodeware can provide the degrees of relief necessary. Recent discussion initiated on this forum as to how to lock everyone out but the NodeOp :-), revealed X1J4 can prevent L2 uplinks. In addition, possibly XNOS can also be so configured. Does anyone know if G8BPQ can perform L2 'controls'? If so, this would be the overall recommended approach, rather than deny user connects.

Node filtering: Initially, node filtering was emplaced with NetRom by adjustment of the 'broadcast path quality' parameter. Setting this to a high value restricted distant nodes (those with a low probability of a successful connect). A low value incouraged the promulgation of distant nodes. The judgement call on this is up to the NodeOps philosophy whether a large node table with some unreliability is better than a small, but more reliable node table. Another factor is that a large node broadcast table will introduce more overhead into the system. In general, it's best to determine a reasonable balance between distant connectivity and destination information to the local users.

With the introduction of NJ7P's TheNetPlus, node filtering become more sophisticated. Here, there was a switch to allow/disallow the broadcasting of 'pound' nodes. These were the backbone trunk nodes that the system NodeOp wished to disguise from the regular NODES command. The 'pound' nodes were included with the regular system broadcasts but usually of little interest except to the local NodeOp. The thinking was that if these could be 'turned off', it would decrease the amount of congestive overhead on the system. Again, whether or not to use this filter is the call of the NodeOp.

XNOS has node filtering as well. In addition to actually turning OFF node broadcasts out/in a certain port, one can adjust the "path quality' values such that virtually any degree of nodes are introduced. Additionally one can INCLUDE/EXCLUDE specific nodes. Thus there appears to be little justification to sharply limit node broadcasts within an entire network, just because of an internet gateway.

Most XNOS gateways I've seen usually limit NODES broadcasts from the internet side, into the local system as a matter of sensible policy. This reduces congestive overhead to the RF network. If the RF users are interested in destinations, they can connect (if the system is open) to the gateway and request that information. At our local AZGATE:NJ7P-15 gateway, the policy is to only broadcast the gateway's existance into the RF system.

Speaking of internet gateways, there appears to be some confusion about the legality of amateur operation. One gateway here in the state is locked down so tight, they request people to WRITE a LETTER asking for information! In addition, newusers on the radio side are barred from making use of normal gateway commands. This is the most extreme case of 'lockoutitus' I've seen during my internet hopping.

The AZGATE:NJ7P-15 gateway on the other hand is completely open, both on the internet and amateur sides. There is no need for new users to request special permission to use the system. Just log in and do it! Many people feel resentful if they have to go 'hat in hand' so to speak, to request permission to use a gateway. Maintaining an open system of course is the

ideal way to encourage packet operation and enhance the knowledge level of
new users. It also reduces the workload on the gateway SysOp since he
doesn't have to maintain tedius ftpusers files.

I hope in the sharing of these thoughts, constructive comments, pro or con,
on network policy and administration will result. Folks on this forum have
a lot of experience and knowledge to share which can benefit all of us.

73 de Jack

117. Re: [NETSIG:2083] Re: X1J version 4 Experiments

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Mon, 23 Oct 1995 14:31:48 -0500
To: netsig@tapr.org
Message-ID: <199510231931.OAA16081@sys1.tapr.org>
Rendered body type: text/plain

I've found it's good policy to check out a new node chip locally in a TNC
before installing it at a distant site. That way you can check out all the
functions. Sometimes I've forgotten to change a password from a previous
image, or some other dumb mistake.

With the X1J and a wire to solder, it's convenient to have a 'spare' TNC
that can be used. Once you are satisfied with local operations, than the
remote installation just consists of swapping out TNCs.

As far as not getting anything on the laptop screen at the remote site, the
most common problem is due to something in the TNC's ROM memory from the
previous nodechip at conflict. Here it's a good idea to pull the TNC memory
battery for a minute or so, then try again. Another area is that the serial
port speed between the laptop and TNC may be in conflict.   If that's not
it, then perhaps handling of the new chip has caused a static jolt to change
the internals somewhat. Again, a good justification of maintaining a 'swap'
TNC.

73 de Jack

118. Re: [NETSIG:2064] Re: TNC-based compression

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Mon, 23 Oct 95 15:07:54 UTC
To: netsig@tapr.org
Message-ID: <8431@paccomm.com>
Rendered body type: text/plain

I have seen Z-80 assembler code offered for sale which claimed to use under
3k bytes of memory and .5k bytes of EPROM space and would operate at
9600 bps on a slow Z-80. Those are the unverified claims of the author, but
even if only half as good, would still be worthwhile.

Why isn't it implemented in amateur TNCs?
If you believe Chas. Brabbam, the manufacturers are all getting so rich on
$100 TNCs that there is no incentive to innovate. (Conspiracy theory.)
Actually it has to do with standards and interoperability. Since BBS programs
offer compression and those handle the bulk of traffic, the demand for the
product in the TNC isn't clear.

95% of TNCs are purchased by Joe Ham who wants to access a local BBS. He
would only be interested in compression if it cost no more and worked with
all possible BBSs he can hear. I don't see any mechanism to standardize
on a compression method which would make that practical for a manufacturer
to support.

As to the horsepower of a TNC, various folks keep busy beating the Z-80
dead horse. Today's 20 MHz Z80 sure has a few more cycles than the 2.5 MHz
original TNC-2. Or you can pay 4x the price and get a 25 MHz 68360 (plus
a lot of other goodies). But most TNCs have more than enough horsepower
for their 1200 or 9600 baud activities.

By the way, we're still working on the '2-port PackeTen' which was shown
at the DCC. 68302 power. Maybe late this year.

73 to all,
Gwyn
_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

119. Re: [NETSIG:2100] Re: Subnetting (X1J2 Node_IP)

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Mon, 23 Oct 1995 17:57:35 -0400
To: netsig@tapr.org
Message-ID: <199510232157.RAA10194@nadc.nadc.navy.mil>
Rendered body type: text/plain

Just a reminder that the upper 2 bits of the 3rd octet is reserved!!

That is addresses of greater than xx.xx.63.xx are not valid, at least
according to the ampr.org rules. Brian has tried to get this across
to us - some honor it some do not. I personally do in EPA.

Doug

120. RE: GMSK Modems

From: Andy Demartini <ademart@interramp.com>
Date: Mon, 23 Oct 95 19:19:13 EDT
To: netsig@tapr.org
Message-ID: <Chameleon.951023193714.Postmaster@interramp.com>
Rendered body type: text/plain

I've had a look at the web page that describes the "V.Fast288" GMSK modem
and can shed a little light on the device. The page includes the printed circuit
board silkscreen, which shows which major chips the designers used.

        First, the modem chip is the FX589. This is a GMSK (Gaussian Minimum Shift
Keying) modem sold by Consumer Microcircuits Ltd (aka CML) in the UK and by MX-COM
in the US. It's the latest in a family of GMSK modem chips produced by those companies.
The Web page is correct when it says that their part has been successfully used in
commercial applications.

        This FX589 modem was used in the DRSI DPK-9600 tnc, which was first sold about
three years ago. It is fully compatible with G3RUH modems on-the-air. There are
many DPK-9600s (with FX589 chips) running in systems which also use G3RUH modems.

        This modem is a little different in that the FX589 provides bit timing clocks
_to_ the tnc's microprocessor. This is different than the TNC-2 standard, where the
tnc supplies 16x clocking to the modem for receive timing. The MX-COM modem follows
commercial/industrial standards.

        Since the clocks are handled differently, and since the designers have to add
the K9NG data scrambler, the V.Fast288 modem has a PIC16xx microprocessor. This is
an inexpensive microcontroller which is very popular in cost-sensitive machine controls.
It looks like the PIC16xx is doing the K9NG scrambler as well as the clock interface to
the TNC-2.

        The V.Fast288 modem should be a very solid alternative to the G3RUH design.
It's success will also depend on it's pricing relative to the G3RUH devices.

Regards,

Andy KC2FF

121. Re: [NETSIG:2102] GMSK Modems

From: dkelly@iquest.com (David Kelly)
Date: Mon, 23 Oct 1995 20:09:21 -0500
To: netsig@tapr.org
Message-ID: <v01530501acb1e957ff59@[204.177.193.231]>
Rendered body type: text/plain

>Last week, a couple of UK hams advertised a new GMSK modem kit on the
>ham-digital mailing list.
>It fits a standard tnc disconnect header and supposedly works to 38.4Kbps.
>It is based on some standard GMSK VLSI chipset intended for the European
>cellular industry. For more info, refer to:
>http://www.stack.serpukhov.su/~victor/hamradio/packet/vfast288.html
>
>What I'm wondering is, would this modulation method be an improvement over
>the K9NG scheme? They advertise the modem to be compatible with the
>K9NG scheme when used at 9k6, so the scrambler must be the same.
>What possible advantages would these things have?
>
>Anyone know anything about these rascals?

I saw a good old MX-COM MX-589 on their web page. Nothing new or magic
about that, its the same thing DRSI used in their DPK-9600. Last time I
heard MX-COM would sell onsies or twosies for about $20 each. I keep

meaning to build a couple of packet modems with the MX-589 myself.

A bit curious about what they are using a microcontroller on the modem
board for?

--
David Kelly N4HHE,   n4hhe@amsat.org,   dkelly@iquest.com
==
To invent, you need a good imagination and a pile of junk.
                -- Thomas Edison

122. Re: [NETSIG:2076] HAPN organisation

From: bewhite@ibm.net
Date: Tue, 24 Oct 95 07:57:25
To: netsig@tapr.org
Message-ID: <9510241459.BT0017@localhost>
Rendered body type: text/plain

Wouldn't you know it ! The boards turned up the day after I posted the
message enquiring about an email address for HAPN.
       73
   Barry White
   bewhite@ibm.net
   VK2AAB @ VK2AAB.NSW.AUS.OC

123. Re: [NETSIG:2101] Re: Closed backbones (was Re: ACL On X1J-4)

From: bewhite@ibm.net
Date: Tue, 24 Oct 95 16:02:10
To: netsig@tapr.org
Message-ID: <9510242308.AC0013@localhost>
Rendered body type: text/plain

Have been reading the thread on backbone access with interest.
All our backbone is on UHF in the link sub-band (420-423 & 440-443).
We only allow BBSs onto the backbone by arrangement and where to do so
will relieve the VHF user frequencies of the forwarding traffic.
It does increase the hidden transmitter problem however. It will all
change soon as we are going to dedicated one to one split frequencies on
420 and 440 and some other arrangements will be needed for BBSs.

  By the way, I'll be the mug, who or what is NEDA ?

       73
   Barry White
   bewhite@ibm.net
   VK2AAB @ VK2AAB.NSW.AUS.OC

124. Re: [NETSIG:2107] Re: Coordinators who don't

From: "Tom Moulton" <tmoulton@ram.net>
Date: Tue, 24 Oct 95 08:56:23 EDT
To: netsig@tapr.org
Message-ID: <15021573.1f53@ram.net>
Rendered body type: text/plain

>I would have to say this is bad advice. If you can't the IP coordinator cont
>act
>brian@ucsd.edu - he does not like to be bothered though and use this as last
>
>resort.
>
>IP requires a coordinated effort. You can't just put a station on the air
>without support of routers and the rest of the group. SO even though you
>may be tempted to "do it on your own" it is not a good idea.
>
>Doug
>
I agree.

It took me a few weeks to a month. I sent a couple of messages, but not
enough to piss him off...

Remember this is a hobby and it's fun!

(If you don't belive me I'll bring a few guys over and we'll beat it into
 you until you agree it is fun... :})

One problem I had was getting a working email address... I wish the coorid

list had them...

Ps. Brian is extreemly busy having "FUN"...

****
Thomas A. Moulton, W2VY
w2vy@ram.net

125. Re: [NETSIG:2112] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Tue, 24 Oct 95 10:10:20 EDT
To: netsig@tapr.org
Message-ID: <15021573.1f54@ram.net>
Rendered body type: text/plain

>95% of TNCs are purchased by Joe Ham who wants to access a local BBS. He
>would only be interested in compression if it cost no more and worked with
>all possible BBSs he can hear. I don't see any mechanism to standardize
>on a compression method which would make that practical for a manufacturer
>to support.

Is there interest in forming a group to discuss adding compression to our
AX25 operations? This is another area which Hams have fallen behind...

The easiest way I can think of is to allocate a new PID (F2?) for use
with compression protocols.

The compression would need to be supported in TNC's and Network devices
as well as BBS's that don't use TNC's.

>
>As to the horsepower of a TNC, various folks keep busy beating the Z-80
>dead horse. Today's 20 MHz Z80 sure has a few more cycles than the 2.5 MHz

In Mobitex we have v.42bis compression running on a 68hc11, which is not
a fast chip either. (I think it is in the 2mhz range)

The important thing to remember is that as long as you can compress, send
and decompress it faster than you can just send it, you are ahead of the
game!

One thing that we will need to do is obtain code or a license for code
that we can share.

****
Thomas A. Moulton, W2VY
w2vy@ram.net

126. IP coordination in Western PA

From: Bob Hoffman <hoffman@cs.pitt.edu>
Date: Tue, 24 Oct 1995 10:33:38 -0400 (EDT)
To: netsig@tapr.org
Cc: mac@ns1.wireless.com, mbtindor@cris.com
Message-ID: <199510241433.KAA00658@bert.cs.pitt.edu>
Rendered body type: text/plain

Thanks to Mike, K3MC, for forwarding the concerns expressed on the
netsig@tapr.org mailing list to me. I do not receive this list.

I apologize for the delay in responding to these requests. I am under a great
deal of pressure here and "hobby" issues must take a back seat.

My office telephone number is 412-624-8404; FAX is 412-624-8854. I am in
the office from 9AM to 5PM, Monday through Friday. If someone needs an
IP address quickly, the best way to get it is to call me at work.

I do not have a packet station on the air any more, so I depend on W2XO and
his Internet email gateway to get messages to N3CVL@W2XO forwarded to me here
at hoffman@cs.pitt.edu. There may be occasions when mail forwarded this way
gets lost. Of course, I have no way of knowing when this happens.

If someone makes a request and hasn't heard from me after several weeks or
months, please remind me! I'm getting old and forgetful and need to be
reminded of things.

Regarding dynamic IP allocation --

I wrote a tiny paper on that subject for the 1987 ARRL CNC. I have no

expectation of using that to assign addresses for "permanent" users in an area. I envisioned using it much like cellular telephone handoffs for mobile users traveling between IP address regions.

Regarding subnets --

I have set aside the 44.112.1.* addresses to be assigned in blocks of 16 to anyone requesting subnets. So far, only two groups have requested subnets. I've delegated 44.112.4.* to Fred Weiser, KA3AWR, in Northwestern PA (Erie & vicinity). All other addresses come from the 44.112.0.* "random" group.

[Gripe mode on]

Why is it that people will grumble endlessly to one another about how they're having a problem with someone, BUT, they will NEVER actually go to the person they're grumbling about and confront him with the problem?

I maintain a full-duplex UHF repeater serving packet users in Pittsburgh. It was old equipment that had seen better days and it developed a spur that caused interference to another repeater. The owner of the other repeater was able to identify our repeater as the source of the spur.

But, did he actually tell us our repeater was causing him problems?
Of course not!

He grumbled to his friends about how we ran a lousy repeater and how we were incompetent. Apparently this went on for several MONTHS, and all the time, he got madder and madder at us.

But would he actually call one of us up and tell us we had a problem?
Of course not!

Finally, I happened to run into one of his friends on 2m while I was on the way up to the repeater site to do some service work on another machine there. He relayed the story about how we had been causing interference for months and how this other repeater owner was going to haul us before the FCC, the repeater council and God knows who else. About 5 minutes with the spectrum analyzer confirmed that we indeed had a spur and we were able to tweak it away. Problem solved.

For a bunch of people who claim to have communications as our hobby, we certainly don't communicate very well.

[Gripe mode off]

Best regards,

---Bob.

P.S. Since I don't receive the netsig@tapr.org mailing list, please cc: me on any replies. Thanks.

--
Bob Hoffman, N3CVL University of Pittsburgh Tel: +1 412 624 8490
hoffman@cs.pitt.edu Department of Computer Science Fax: +1 412 624 8854

127. Re: [NETSIG:2113] Re: Subnetting (X1J2 Node_IP)

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Tue, 24 Oct 1995 10:24:57 -0500
To: netsig@tapr.org
Message-ID: <199510241524.KAA21336@sys1.tapr.org>
Rendered body type: text/plain

Does this mean our newly assigned local area IP address reorganization of 44.124.80/20 is a no-no? Please explain!

73 de Jack

>Just a reminder that the upper 2 bits of the 3rd octet is reserved!!
>
>That is addresses of greater than xx.xx.63.xx are not valid, at least
>according to the ampr.org rules. Brian has tried to get this across
>to us - some honor it some do not. I personally do in EPA.
>
>Doug
>

128. Re: [NETSIG:2117] Re: Closed backbones

From: "Tom Moulton" <tmoulton@ram.net>
Date: Tue, 24 Oct 95 12:12:47 EDT
To: netsig@tapr.org
Message-ID: <15021573.1f57@ram.net>
Rendered body type: text/plain

> By the way, I'll be the mug, who or what is NEDA ?

http://www.cam.org/~dino/neda/neda.html

neda@teledm.com

NEDA
PO Box 563
Manchester, NH USA 03105

They support and encourage packet radio systems throughout North East USA
(Which does reach down into NY/NJ)

They have provided an example of how things can work with good network
engineering pratices.

I belive that most of the systems they use are based upon TheNet, but they
do not promote one solution over another.

****
Thomas A. Moulton, W2VY
w2vy@ram.net

129. RE: GMSK Modems

From: mark@tetherless.com (Mark Oppenheim)
Date: Tue, 24 Oct 1995 09:23:54 -0700
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199510241623.JAA16969@gorgor.pa.tetherless.com>
Rendered body type: text/plain

At 07:48 AM 10/24/95 -0500, Andy Demartini wrote:

> This FX589 modem was used in the DRSI DPK-9600 tnc, which was first sold
about
>three years ago. It is fully compatible with G3RUH modems on-the-air.
There are
>many DPK-9600s (with FX589 chips) running in systems which also use G3RUH
modems.
>

Correct me if I'm wrong Andy, but wasn't there some incompatibility issues
regarding the Pacsat crowd when they used this modem on the birds?

Mark

130. Re: [NETSIG:2106] Re: ssampson (X1J2 Node_IP_how_to)

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 24 Oct 1995 14:57:23 -0500
To: netsig@tapr.org
Cc: crompton@nadc.nadc.navy.mil
Message-ID: <199510242024.PAA15162@ns2.icon.net>
Rendered body type: text/plain

>Datagram acks at the IP level and we find that it works well as long as you
>use the linear IP backoff with reasonable numbers.

Must be something new. I checked my 1.10L version of JNOS, but could
only find an ax timer, netrom timer, and a tcp timer (which I run all in
linear backoff).

Isn't ACK'ing and Datagramming an oxymoron?

Most IP datagram circuits that you come across in real life, use TCP for the
reliable end to end timing, and other needs.

--
Steve/n5owk

131. Re: [NETSIG:2106] Re: ssampson (X1J2 Node_IP_how_to)

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Tue, 24 Oct 1995 17:16:42 -0400
To: netsig@tapr.org
Message-ID: <199510242116.RAA16139@nadc.nadc.navy.mil>

Rendered body type: text/plain

>What I should have said is datagram acks at the TCP
>level only. It does ack though and the retry mechanism
>is in place. Properly setup it works well. If you have
>to use connected mode then you should fix your RF circuit.

Well, that was my point also. Karl remarked that he didn't
see an use for VC, and my only intention was that if you were
on a multi-node frequency, then you probably need connected
mode. Else the interference would cause the TCP to back-off
until next year :-)

Any real network I propose has seperate frequencies on each
node leg (you can re-use frequencies down the line). The group
then coughs, and says they only have $100. I tell them to solder
a coat hanger to an SO-239 and hook it to a C-64 running Baycom.

>Hams are an impatient bunch though - you aren't going to
>get millisecond turn around times at 1200 baud with 20 users!

Damn! And here I was hoping...   :-)

132. Re: [NETSIG:2115] Re: GMSK Modems

From: pipe2@oeonline.com
Date: Tue, 24 Oct 95 18:10 EDT
To: netsig@tapr.org
Message-ID: <m0t7rYZ-0009plC@oeonline.oeonline.com>
Rendered body type: text/plain

>A bit curious about what they are using a microcontroller on the modem
>board for?

The MX-589 chip has a serial output, the PIC probably is doing something to
convert the data string. If I remember the info from my MX_COM data book
right, the MX-589 is one of the chips that can handle some protocol
functions itself. These functions include error detection and ERROR
CORRECTION, among other things. I don't know how much of the chip is being
implemented in that design (havn't looked at it much yet). The PIC might
also be doing some type of error correction/detection and/or packet data
handling itself. One of the PIC's best features is its ability to run
extreamly fast (5 MIPS rated at 20 MHz, I made one do 8 MIPS at 32 MHZ,
though). The Microchip data book on the PIC shows a DSP algorithm
implemented with a PIC17c42. Very impressive! It was a fast Fourier transform.

        -Bill kb8wyp

133. Internet gateways (was [NETSIG:2110] Re: Closed backbones)

From: Ed Southall   WD0ELL <ecs@sullivan.hwy66.com>
Date: Tue, 24 Oct 1995 18:00:57 -0500
To: netsig@tapr.org
Message-ID: <9510242329.AA14757@sullivan>
Rendered body type: text/plain

At 07:34 AM 10/24/95 -0500, Jack N7OO wrote:
>I appologize to the gentle followers of this forum. It was never my
>intention to become a combatant with anyone, or participate in a flamefest.

<snip>

     FB. Let's leave it at that.

>However, there are some valid networking philosophys presented and it might
>be beneficial to openly (and hopefully dispasionately) discuss them.
<snip>
>Speaking of internet gateways, there appears to be some confusion about the
>legality of amateur operation...
<snip>
>The AZGATE:NJ7P-15 gateway on the other hand is completely open, both on the
>internet and amateur sides. There is no need for new users to request
>special permission to use the system.   Just log in and do it! Many people
>feel resentful if they have to go 'hat in hand' so to speak, to request
>permission to use a gateway. Maintaining an open system of course is the
>ideal way to encourage packet operation and enhance the knowledge level of
>new users. It also reduces the workload on the gateway SysOp since he
>doesn't have to maintain tedius ftpusers files.

<snip>

Hmmmm. I'd like to hear from others regarding the operation of 'wide open' Internet/AmPRnet gates. I see problems both in terms of controlling message volume and message content. There exists a group of encap gateways which provide 'wormholes' linking amateur LANs that seems cooperative and well regulated but this sounds like an independent effort of a different sort (correct me if I am wrong, Jack).

>I hope in the sharing of these thoughts, constructive comments, pro or con,
>on network policy and administration will result. Folks on this forum have
>a lot of experience and knowledge to share which can benefit all of us.
>
>73 de Jack
>
Ditto. 73 - Ed

+---+
| Edward C. Southall   New Haven MO USA |
| Internet: ecs@hwy66.com   AmPRnet: wd0ell@wd0ell.ampr.org |
| wd0ell@amsat.org   AX.25: wd0ell@wb0qgr.mo.usa.noam |
+---+

134. Re: [NETSIG:2117] Re: Closed backbones (was Re: ACL On X1J-4)

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Tue, 24 Oct 1995 23:03:51 -0300
To: netsig@tapr.org
Message-ID: <199510250203.XAA06736@bud.peinet.pe.ca>
Rendered body type: text/plain

>
> By the way, I'll be the mug, who or what is NEDA ?
>
>   73
>   Barry White
>   bewhite@ibm.net
>   VK2AAB @ VK2AAB.NSW.AUS.OC

Check out their web page and find out:

http://www.cam.org/~dino/neda/neda.html

73 - Ron VE1AIC

135. Re: [NETSIG:2119] Re: TNC-based compression

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 25 Oct 1995 03:35:31 -0500 (CDT)
To: netsig@tapr.org
Message-ID: <199510250835.DAA26223@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to Tom Moulton:
>
> >95% of TNCs are purchased by Joe Ham who wants to access a local BBS. He
> >would only be interested in compression if it cost no more and worked with
> >all possible BBSs he can hear. I don't see any mechanism to standardize
> >on a compression method which would make that practical for a manufacturer
> >to support.
>
> Is there interest in forming a group to discuss adding compression to our
> AX25 operations? This is another area which Hams have fallen behind...

This is probably best done on the TAPR-TNC group, since Howie and other TNC software people are on that list. There focus is TNC related issues and this would be something they coudl sink there teeth into. Howie should probably comment more.

If we had to -- we could start another list -- but I think that list would be about as perfect as one could get.

> In Mobitex we have v.42bis compression running on a 68hc11, which is not
> a fast chip either. (I think it is in the 2mhz range)

If the TNC-95 and other TNCs being made available that support more horsepower and allow alot more memory -- it should be easy. The problem comes becuase of the hugh momentum the current standard has.

Cheers - Greg

136. Re: Closed backbones

From: shawnpat@sierra.net
Date: Wed, 25 Oct 1995 04:47:06 -0700
To: netsig@tapr.org
Message-ID: <199510250446.AA03043@diamond.sierra.net>
Rendered body type: text/plain

Jack Taylor wrote:

>On the issue of shutting down the HEARD (or MHEARD) function on backbones:
>How can a NodeOp determine whether or not there's any potential harm to his
>system, if it's not in place? Far as I know, It doesn't adversely affect
>node operation to leave it enabled. Don't know about anyone else, but I
>make it a practice to periodically check the MHEARDs on backbone trunks as a
>means to inform me what's happening on the frequency.

This I agree with. Though the MHeards does eat up a few clock cycles
each time the node updates the list, I feel the benifits of the information
it gives is measurable in my time. To explain: We had a node here that
was 4.5 hours drive away. It was the third node out and the farthest
of all that I care for. This node was also not very welcome in it's
area. So, not only was the node subject to the ordinary problems, but
also delt with direct and indirect interference. In the almost 2 years
of it's operation I was able to *armchair-debug* each and every problem.
>From miss-aligned beam (this end), QRP interference transmitter, receive
sensitivity, frequency drift, auto callsign duplicating tnc on frequency,
antenna icing, to name a few.

How this was done was using the MHeards list, and Stats list as the primary
information source. Being able to directly watch the neighbor node on this
side of the state, I could use all the information and narrow down the
diagnosis to one or two possibilities. By keeping periodic tabs on the
normal functioning, the changes became obvious. So the benifits of having
that data available saved me the time which would have been waisted in
travel to and from the site, not to mention gas.

Give this a try. Connect to a neighbor node that you can see on monitor.
>From it make a connect to the other node. Do the MH and check the number
of packets, ask for a routes (or some such), do a MH again and compare the
difference in packets with what you have monitored directly. Do they
match? If so, congratulations, the node heard the first one pretty good.
If not, there may be a problem other than *hidden node sindrome*.

>I hope in the sharing of these thoughts, constructive comments, pro or con,
>on network policy and administration will result. Folks on this forum have
>a lot of experience and knowledge to share which can benefit all of us.
>
>73 de Jack

Amen!

73 de Shawn, N7XBM.

137. Re: [NETSIG:2112] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 25 Oct 1995 09:54:46 -0500
To: netsig@tapr.org
Message-ID: <199510251454.JAA08936@mercury.texoma.com>
Rendered body type: text/plain

According to Gwynn at Pac-Comm...

>I have seen Z-80 assembler code offered for sale which claimed to use under
>3k bytes of memory and .5k bytes of EPROM space and would operate at
>9600 bps on a slow Z-80. Those are the unverified claims of the author, but
>even if only half as good, would still be worthwhile.
>

Here I'll state again that I'm not particular as to which processor would be
used to implement TNC-based compression. However, I do suspect that the Z-80
can do the job just fine, as Gwynn's statement suggests. (To me, at least.)

In my last posting, I said that I was not looking for a retro-fit of old
designs, but instead was thinking of possibly seeing compression in the next
generation of TNC's. After talking the issue over with a few more
knowlegable hams, I had to change my opinion on that issue. Now I DO believe
it's possible for compression to be incorporated into the venerable TNC2
clone, and that existing TNC2's could be upgraded easily. Gwynn's statement
above supports what I've been hearing; That the Z-80 has not been tapped for
it's full potential as of yet, and still has something more to offer. This

would be a really excellent way to utilize that potential.

Of course, with newer designs with bigger, better processors there should be no question as to the idea's practicality. Still, an attempt to cram it into a TNC2 clone would be EXTRA nice if it worked out, for obvious reasons.

>Why isn't it implemented in amateur TNCs?
>If you believe Chas. Brabbam, the manufacturers are all getting so rich on
>$100 TNCs that there is no incentive to innovate. (Conspiracy theory.)

I'll leave it to the members of the NETSIG to read my last posting to determine for themselves whether I described an alleged "conspiracy", or just a few simple facts of (business) life. At no point did I make the statement outlined above. If anyone needs clarification, send me a personal note.

>Actually it has to do with standards and interoperability. Since BBS programs
>offer compression and those handle the bulk of traffic, the demand for the
>product in the TNC isn't clear.
>

I think it is fairly clear to everyone that "Joe Ham" wants better throughput and less channel congestion. He also wants it to be plug 'n play, and no more expensive than what is already on the market. In addition, Joe Ham wants it all to work with his present 1200 bd, 2-meter setup.
That's what TNC-based compression can do, and it will do it for almost EVERYTHING, not just BBS forwarding... APRS, APLINK, TCP/IP, BBS User access; You name it. While it's doing so, it will establish network-wide compatability standards for compression of packet racket. (In a general sense.)
By the simple expedient of having the TNC "recognise" other compressed TNC's and respond accordingly, compatability and interoperability would be assured, just as it presently is with landline modems. That's a no-brainer.

>95% of TNCs are purchased by Joe Ham who wants to access a local BBS. He
>would only be interested in compression if it cost no more and worked with
>all possible BBSs he can hear. I don't see any mechanism to standardize
>on a compression method which would make that practical for a manufacturer
>to support.
>

The landline folks figured out a way to do it, and I believe that hams can do it too.. After all, it's not like we would have to re-invent the wheel.

Anyone with programming skills, an EPROM burner, and an objective, positive attitude could easily try out any number of compression schemes to see which is best suited for use in the packet radio TNC. There's no need to argue when you can just test, document your (reproducable) results, then go with the best scheme available.. Guess what? You've just found out how to arrive at a standard! This would be a good project for TAPR to look into, but a well-equipped and knowlegable individual could probably develop an upgrade EPROM for the TNC2 clone if he was patient and energetic enough.

Packet BBS programs offer several "flavors" of compression. They are alike though, in that the built-in compression schemes in each can be turned off or bypassed. For this reason, there's no need to pursue compatability with a particular style of BBS message compression. I would imagine that most if not all of them require more RAM and EPROM space than a competitively priced TNC can offer anyway. (BBS authors: Correct me if I'm wrong here.) Since the built-in compression offered by BBS software is almost certainly more sophisticated than what can be shoe-horned into a TNC2 at this time, I expect that they will still be best for most BBS message forwarding tasks. *BUT* TNC-based compression would allow BBS's with no compression or incompatable compression schemes to get the job done much faster than they presently can, while speeding up user access with no need for special client software. Even the packet ops using old dumb terminals, C-64's, or PC's running TELIX, KAM-TERM, PAKET, LAN-LINK (or whatever) would have the benefits of compression. That's worth looking into!

(Snipped some more discussion of the relative merits of the Z-80 chip.)

Many of you may be wondering why I'm suggesting TNC-based compression instead of going to a higher baud rate to increase throughput and reduce channel congestion across the network... Actually, I'm not. TNC-based compression would be useful at ANY baud rate!
What I'm saying is that "Joe Ham" isn't switching over to higher baud rates as fast as we would like him to, mainly because it is still a bit too expensive and complicated for him to do so. Also, if you're using 9600 baud, and everyone else around you is still 1200 baud, SERIOUS compatability and

interoperability issues arise. TNC-based compression wouldn't suffer from these stumbling-blocks, as it would involve an inexpensive firmware update, and would be fairly transparent to the user. (Cheap and easy) The immediate and lasting benefit to the packet network as a whole should be pretty obvious, whatever baud rate is being used.

Here's some good points about TNC-based compression which occur to me. (Correct me if and where I'm wrong.)

A. Cheap. Can be accomplished through firmware. Many existing TNC's could be updated by swapping out an EPROM. Manufacturers could include compression in new TNC's at very little expense. (Gotta pay a programmer to develop it, if TAPR or some individual doesn't develop it as a "common good" project.)

B. Easy. The TNC can recognise other compressed TNC's and act accordingly with no effort on the user's part. (User transparent, plug 'n play.) A "software switch" could be used to disable compression for those few applications where it is not desirable. (There ARE a few of those, I would guess! DX Clusters could not assume that EVERYBODY is running compressed TNC's in order to copy the DX spots, for example.) The compressed TNC would be instantly compatable with existing systems, so you don't have to go "out on a limb", like the guy who buys a 9600 TNC only to discover that it's no good for the 1200 baud stuff he's surrounded with. (For two years now, I've had the dubious honor of owning the only 9600 TNC in my immediate area. I'm STILL waiting for someone else to "play 9600" with.)

C. Effective. A + B = C ... :-)   The stumbling blocks we are presently experiencing with efforts to get "Joe Ham" to go to a higher baud rate simply do not apply to TNC-based compression. In other words, it will see actual and reasonably widespread USE within a short time after it's introduction. When Joe Ham finally DOES upgrade to faster baud rates, TNC-based compression will work there too.

D. Practical. Being cheap, easy, and effective, TNC-based compression would see immediate and widespread use. In many cases, "Joe Ham" wouldn't even know it was there, but it would still achieve it's purpose, improving overall performance of the network for him and everyone else with very little expense or trouble.

E. Expandable. As RAM and processors get cheaper, more sophisticated compression schemes can be added. If the mechanism is in place to recognise whether another station is "compressed" or not, that same mechanism could easily be used to recognise NO compression, Compression "A", or Compression "B", ect.

F. Compatable. See "B", above.

 I left out the bad side of TNC-based compression. Help me out here, guys. If the idea has merit, it has merit. If it doesn't, shoot it down! All ideas look good to the guy putting them forward, creating "blind spots". I'm no more immune to that than the next guy and after all, I'm just a dumb old appliance operator!

I want better appliances!

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

It takes all kinds, but some are just a bit harder to take.

138. [NETSIG:2105] Re: X1J ver

From: djm@phx-az.com (Daniel Meredith)
Date: Wed, 25 Oct 1995 05:25:00 GMT
To: netsig@tapr.org
Message-ID: <95102500050838@phx-az.com>
Rendered body type: text/plain

PEW>From: paul@paccomm.com (Paul Evans, W4/G4BKI)
PEW>To: netsig@tapr.org
PEW>Date: Tue, 24 Oct 1995 07:16:23 -0500
PEW>Subject: [NETSIG:2105] Re: X1J version 4 Experiments

PEW>The reason you get no response on the port MUST be that pin 9 of
PEW>your serial cable is connected to the laptop and held low.
PEW>This means that the node you are talking to is still in protocolled
PEW>mode NOT sysop mode. ALWAYS disconnect pin 9 in yur computer cable
PEW>when talking to a TheNet node.......

Boy is Paul right on this one hi hi, of course he is since he works
there, but I had the same problem and my laptop was not helping
matters!

Daniel

---
 * OLXWin 1.00 * Press any key to continue or any other key to quit

139. [NETSIG:2117] Re: Closed

From: djm@phx-az.com (Daniel Meredith)
Date: Wed, 25 Oct 1995 05:26:00 GMT
To: netsig@tapr.org
Message-ID: <95102500050839@phx-az.com>
Rendered body type: text/plain

B>From: bewhite@ibm.net
B>To: netsig@tapr.org
B>Date: Tue, 24 Oct 1995 07:57:50 -0500
B>Subject: [NETSIG:2117] Re: Closed backbones (was Re: ACL On X1J-4)

B>   Have been reading the thread on backbone access with interest.
B>All our backbone is on UHF in the link sub-band (420-423 & 440-443).
B>We only allow BBSs onto the backbone by arrangement and where to do so
B>will relieve the VHF user frequencies of the forwarding traffic.
B>It does increase the hidden transmitter problem however. It will all
B>change soon as we are going to dedicated one to one split frequencies on
B>420 and 440 and some other arrangements will be needed for BBSs.

B> By the way, I'll be the mug, who or what is NEDA ?

Northeast Digital Association....An excellent source for networking
publishings concerning the digital world. You'll mostly see AX.25 type
stuff, but lately IP has been entering the picture.

Daniel

---
 * OLXWin 1.00 * Hello, I am part number ||#||||#||#||#||

140. Re: [NETSIG:2119] Re: TNC-based compression

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Wed, 25 Oct 1995 09:29:27 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951025092904.334A-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Tue, 24 Oct 1995, Tom Moulton wrote:

> Is there interest in forming a group to discuss adding compression to our
> AX25 operations? This is another area which Hams have fallen behind...

Yes

>
> The easiest way I can think of is to allocate a new PID (F2?) for use
> with compression protocols.

Any thoughts about negotiation?

--
Howard Goldstein   <hg@n2wx.ampr.org>   http://www.tapr.org/~n2wx/

141. x1j4 and problems

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 25 Oct 1995 15:42:40 -0600
To: netsig@tapr.org
Message-ID: <199510252142.PAA18446@acca.nmsu.edu>
Rendered body type: text/plain

I am sorry but I must admit defeat with my efforts to test the x1j4
node software. I did a plain jane setup from the original that Dave Roberts
sends with the software and it works for about 5-10 minutes and then quits.

I cannot connect to the node from my BPQ Switch. But with a laptop connected as host, the node appears to be normal. I can connect to the BPQ Switch fine. I changed a mess of things and no luck.

So from the other messages where a ham tried to use x1j4 and it failed and he went back to x1j2, I know how you feel!

I sent a note to Dave with my setup file so perhaps Dave will see my error and tell me what's needed. But I am red-faced because my plan was to do a lot of experiments with the ACL setup, but didn't get far enuf to even try that...hi

Karl F. Larsen ---------- k5di@acca.nmsu.edu ---------->

142. Re: [NETSIG:2119] Re: TNC-based compression

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr.)
Date: Wed, 25 Oct 1995 22:00:34 GMT
To: netsig@tapr.org
Message-ID: <9510252155.AA20383@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

On Tue, 24 Oct 1995 23:54:54 -0500, you wrote:

>Is there interest in forming a group to discuss adding compression to our
>AX25 operations? This is another area which Hams have fallen behind...

Question:

Would compression IN THE NETWORK, should such a thing be possible, negate the compression done by bbs software authors in compressing the forwarded messages? In other words, would trying to compress what is already mostly compressed be a "wasted" effort? Not saying one is better than the other, but for personal opinion, I would rather see the whole network compressed, than just the forwarded messages themselves.

Just a thought...

Gary McDuffie, Sr. - AG0N - Scottsbluff, NE
Internet: mcduffie@hannibal.wncc.cc.ne.us
Packet Radio: AG0N@AG0N.#WNE.NE.USA.NOAM

143. IP bcst address revisited

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Wed, 25 Oct 1995 20:02:52 -0500
To: netsig@tapr.org
Message-ID: <199510260102.UAA23584@sys1.tapr.org>
Rendered body type: text/plain

Would like to thank those who responded to my query about the IP broacast address function in the X1J. However, still don't grasp the purpose of this feature (sorry :-). What kind of broadcasts does tcpip use? What do they do.

Karl, k5di suggested setting the X1J broadcast address to 255.255.255.255. Does it really have to be set at anything at all? What happens if it's blank?

73 de Jack

144. Re: x1j4 and problems

From: n5pvl@texoma.com (Charles Brabham)
Date: Wed, 25 Oct 1995 22:17:30 -0500
To: netsig@tapr.org
Message-ID: <199510260317.WAA21654@mercury.texoma.com>
Rendered body type: text/plain

> I am sorry but I must admit defeat with my efforts to test the x1j4
>node software. I did a plain jane setup from the original that Dave Roberts
>sends with the software and it works for about 5-10 minutes and then quits.
>

Hang in there, Karl, and don't feel like the "lone ranger"! I remember cussing and discussing 'BPQ for the better part of 6 months before it got to where I could set it up from scratch with any degree of confidence.
Once I finally figured out how to make it do what I wanted, though, the efforts and headaches seemed worthwhile.
I've heard a lot of good about the node setup you're currently struggling with, so I'm sure that once you get it to "fly", you'll be pleased with the results.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

Get the first shot off FAST. You may not connect, but you'll fluster your
opponent
and can make a rapid follow-up shot really count before he recovers his
composure.

145. Re: [NETSIG:2135] x1j4 and problems

From: ssampson@icon.net (Steve Sampson)
Date: Wed, 25 Oct 1995 21:57:41 -0500
To: netsig@tapr.org
Cc: k5di@acca.nmsu.edu
Message-ID: <199510260324.WAA22072@ns2.icon.net>
Rendered body type: text/plain

>   I am sorry but I must admit defeat with my efforts to test the x1j4
>node software. I did a plain jane setup from the original that Dave Roberts
>sends with the software and it works for about 5-10 minutes and then quits.

Maybe post the ascii save of your config, and we can see what's going on?

By quit, do you mean the leds quit cycling? I have seen this myself with J2.
It was on old 1270 TNC I think. It wouldn't start-up reliably. Try another
TNC,
with that ROM.

--
Steve/n5owk
"Sometimes it's the spark, sometimes it's the fuel; sometimes it's the driver"

146. IP addresses in Western PA

From: mbtindor@cris.com (Michael Tindor)
Date: Wed, 25 Oct 95 08:41:04 EDT
To: netsig@tapr.org
Message-ID: <199510260356.XAA22421@deathstar.cris.com>
Rendered body type: text/plain

A formal apology goes out to Bob Hoffman N3CVL for my flame toward him regarding the speed in which he issues IP addresses...sorry Bob, no hard feelings ok?

no reply needed

Mike
AA8IA

147. [NETSIG:2134] Re: TNC-based compression -Reply

From: Orville Beach <orv@micom.com>
Date: Wed, 25 Oct 1995 20:45:12 -0800
To: netsig@tapr.org
Message-ID: <s08eb1b3.073@micom.com>
Rendered body type: text/plain

On Tue, 24 Oct 1995, Tom Moulton wrote:

> Is there interest in forming a group to discuss adding
compression to our
> AX25 operations? This is another area which Hams have
fallen behind...

Yes

> > The easiest way I can think of is to allocate a new PID
(F2?) for use
> with compression protocols.

And Howie asked:

Any thoughts about negotiation?

-- Howard Goldstein   <hg@n2wx.ampr.org>
http://www.tapr.org/~n2wx/

Hmm.. We already are using a number of PID's for different
protocols/features, selected with <?> no rhyme or reason..
Those certainly won't go away.   Picking a specific PID for

compression doesn't tell you what other features that packet
might be carrying. (NET/ROM, for example)

I suggest that if there's an unused bit in the PID field not
already claimed by one of the PID's in use, then the
presence of that bit indicate compression (or maybe grab 2
unused bits so we can eventually have the choice of up to 3
compression schemes).

For instance, I seem to remember NET/ROM using C8 (I
don't have my docs with me, so that's probably wrong).
That's 11001000b; setting bit 0 (10101001b; C9) would
indicate NETROM with compression).

Or am I just blowing smoke?

Does someone have a list of PID's in use?

Would be impossible to retrofit everything out there; you'd
have to make it the responsibility of the
'compression-aware' box to attempt compression, then
back off if it didn't get the proper response from the other
end.

Comments? This really ought to go to the TNC SIG soon...

73 - Orv - WB6WEY
orv@micom.com

148. Re: [NETSIG:2099] Re: IP Broadcast (X1J question)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 26 Oct 1995 01:09:55 -0600
To: netsig@tapr.org
Message-ID: <199510260709.BAA29187@acca.nmsu.edu>
Rendered body type: text/plain

At 08:12 AM 10/23/95 -0500, you wrote:
>
>>>While we are hot and heavy on X1J node functions, what is the PURPOSE of
>>the broadcast
>>>address? What does it specifically do and what are it's applications?
>>>73 de Jack
>
>>   It can and should be used as an aid to subnet implimentation. It
>>   limits the range of ip address that will be passed.
>>   And it is complex how it works. It passes each ip number in binary
>>   form through the mask and if it does it sends the address out.
>>   Unless you understand subnet set it to 255.255.255.255 abd
>>   everything will work.
>>Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->
>
>Per the X1J4 docs, this is the blerb I found:
>
>>So to set the node IP broadcast address to that used over here,
>>the command would be :
>>   IPBROADCAST 44.131.0.0 (United Kingdom IP series)
>>The IPADDRESS is the address that the node will respond to.
>>It is used only as detailed in section 7. The IP broadcast address
>>is the one used to denote broadcast packets that will be largely
>>ignored. Note that port addressing is NOT currently supported.
>
>So with a setting of IPbroadcast 44.125.131.127, which portion of
>the 4th octet gets ignored, 1-127 or 128-255 ?
>

I think that 44.125.131.127 as a IPbroadcast will exclude all IP address
EXCEPT 44.125.131.127 and think this because to make my x1j2 nodes work I
made IPbroadcast 255.255.255.255 and have not excluded any IP address so
far....hi

        To do what you seem to want Shawn would require a address like:

   44.125.131.192/28 I think. And this says "ignore everything except
193-254" but I am not sure we can even put a address like that into
IPbroadcast. But I will try and report on the results, just as soon as I get
my node running right....:)

>Also what exactly is the result of a non-ignore? The node broadcasts
>the address (if so, for what purpose)? Is this a type of broadcast
>from the node or is it a broadcast origionated from elsewhere?

        Shawn I remember trying to set up the IP router in x1g? and the
default IPbroadcast was 44.130.0.0 or like that, and the darn thing would
not work at all! I forget who told me to try 255.255.255.255 but I have used
that since and now see
0.0.0.0 used and that seems to work too as a Broadcast EVERYTHING...

>
>73 de Shawn, N7XBM.
>
>

Karl F. Larsen -------------- k5di@acca.nmsu.edu -------------------------->

149. Re: [NETSIG:2105] Re: X1J version 4 Experiments

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 26 Oct 1995 01:10:01 -0600
To: netsig@tapr.org
Message-ID: <199510260710.BAA29192@acca.nmsu.edu>
Rendered body type: text/plain

At 07:21 AM 10/24/95 -0500, you wrote:
>
>The reason you get no response on the port MUST be that pin 9 of
>your serial cable is connected to the laptop and held low.
>This means that the node you are talking to is still in protocolled
>mode NOT sysop mode. ALWAYS disconnect pin 9 in yur computer cable
>when talking to a TheNet node.......

        Hi Paul, no, that isn't the problem. I have removed the rs-232 plug
completely and had the same problem. I think it is the L1 Flush problem that
has me stopped.

Karl F. Larsen -------------- k5di@acca.nmsu.edu -------------------------->

150. Re: [NETSIG:2113] Re: Subnetting (X1J2 Node_IP)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 26 Oct 1995 01:10:04 -0600
To: netsig@tapr.org
Message-ID: <199510260710.BAA29197@acca.nmsu.edu>
Rendered body type: text/plain

At 07:46 AM 10/24/95 -0500, you wrote:
>Just a reminder that the upper 2 bits of the 3rd octet is reserved!!
>
>That is addresses of greater than xx.xx.63.xx are not valid, at least
>according to the ampr.org rules. Brian has tried to get this across
>to us - some honor it some do not. I personally do in EPA.
>
>Doug
>
        Doug, we are already up to 5 in NM. I expect to be long dead by the
time we reach 10.

Karl F. Larsen -------------- k5di@acca.nmsu.edu -------------------------->

151. Re: [NETSIG:2125] Re: ssampson (X1J2 Node_IP_how_to)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 26 Oct 1995 01:10:07 -0600
To: netsig@tapr.org
Message-ID: <199510260710.BAA29201@acca.nmsu.edu>
Rendered body type: text/plain

At 12:17 AM 10/25/95 -0500, you wrote:
>
>
>
>
>
>>What I should have said is datagram acks at the TCP
>>level only. It does ack though and the retry mechanism
>>is in place. Properly setup it works well. If you have
>>to use connected mode then you should fix your RF circuit.

>
>Well, that was my point also. Karl remarked that he didn't
>see an use for VC, and my only intention was that if you were
>on a multi-node frequency, then you probably need connected
>mode. Else the interference would cause the TCP to back-off
>until next year :-)
>
        Getting to Pheonix AZ from Las Cruces, NM is a vivid example of
"back off until next year". I sent a smtp to Keith kf7tp today that got
through in just 4 hours!

>Any real network I propose has seperate frequencies on each
>node leg (you can re-use frequencies down the line). The group
>then coughs, and says they only have $100. I tell them to solder
>a coat hanger to an SO-239 and hook it to a C-64 running Baycom.
>

        Don't think the $100 will cover the cost of the SO-239 any more...:)

>>Hams are an impatient bunch though - you aren't going to
>>get millisecond turn around times at 1200 baud with 20 users!

        Steve that's not millisecond, it's multiseconds....:)

>
>Damn! And here I was hoping...   :-)
>
>

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

152. Re: [NETSIG:2098] Re: X1J version 4 Experiments

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Thu, 26 Oct 1995 01:09:50 -0600
To: netsig@tapr.org
Message-ID: <199510260709.BAA29184@acca.nmsu.edu>
Rendered body type: text/plain

At 08:11 AM 10/23/95 -0500, you wrote:
>In message <199510200012.SAA12807@acca.nmsu.edu> netsig@tapr.org writes:
>>   Hi Guys, I have made 2 new e-proms with X1J-4 on them. They will not
>> go to where they will be used until spring next. So I decided to fire one up
>> and use it as a test bed to learn how the node works. It is on the air now
>> and has gathered some nodes and like that.
>>
>>   I just tried to connect to the node but I was refused! 30 minutes

> I have had 4 pair of x1j4 nodes (2 nodes per site, 4 sites)
>on the air for several months
>and have had no problems (that I know of). We do have them
>configured to do ip routing which does work in our area..
>although there has been little use made of the ip routing function
>so far.. (not much ip on the other end of the network to talk to.
>)

        We don't have a lot here either. The tcp/ip group in Pheonix is well
set up and active. We are connected to them by a string of x1j2 nodes at
present.

>
> You might want to see if there is any relationship to the 'L1
>FLush' in the last line of 'status' and your connect problem..
>'L1 flush's should normally stay at Zero... You may need to turn
>off rs232 node braodcasts to stop the 'L1 flush'ing (set mode 4 to
>1) while you have the x1j4 in a standalone situation.
>(dont for get to set mode 4 back to 3 when you put it into a node
>stack)
>
        I will save this advice and try it. As I write this I have erased
the e-proms and plan to take a hard look at my setup. But I didn't even have
a clew that "L1 flushing" is happening and might be a problem. Thanks a bunch!

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

153. Re: [NETSIG:2134] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 26 Oct 95 06:29:04 EDT
To: netsig@tapr.org
Cc: tapr-tnc@tapr.org (TAPR TNC)
Message-ID: <15021573.1f68@ram.net>
Rendered body type: text/plain

>On Tue, 24 Oct 1995, Tom Moulton wrote:
>
>> Is there interest in forming a group to discuss adding compression to our
>> AX25 operations? This is another area which Hams have fallen behind...
>
>Yes
>
>>
>> The easiest way I can think of is to allocate a new PID (F2?) for use
>> with compression protocols.
>
>Any thoughts about negotiation?
>
>--
>Howard Goldstein   <hg@n2wx.ampr.org>   http://www.tapr.org/~n2wx
>/
>

That would be nice, but it will take years to agree upon a protocol and
support it,. whereas if you use a new PID the negotiation is based
on the support of the new PID!

****
Thomas A. Moulton, W2VY
w2vy@ram.net

154. Re: [NETSIG:2136] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 26 Oct 95 06:38:44 EDT
To: netsig@tapr.org
Cc: tapr-tnc@tapr.org (TAPR TNC)
Message-ID: <15021573.1f69@ram.net>
Rendered body type: text/plain

>>Is there interest in forming a group to discuss adding compression to our
>>AX25 operations? This is another area which Hams have fallen behind...
>
>Question:
>
>Would compression IN THE NETWORK, should such a thing be possible, negate th
>e
>compression done by bbs software authors in compressing the forwarded
>messages? In other words, would trying to compress what is already mostly
>compressed be a "wasted" effort? Not saying one is better than the other, b
>ut
>for personal opinion, I would rather see the whole network compressed, than
>just the forwarded messages themselves.
>
>Just a thought...

I mentioned that the network would need compression, but I meant it for when
the usert wanted to connect TO the network to carry out a dialogue with
the network switch. (I just remembered that with TheNet you Always talk
to the Node... Humm... With ROSE you only talk TO the Switch when you
are accessing one of the builtin applications...)

It is very important to do compression on the User TNC, reduce the traffic
they will send over the unrelaible user channel. (Reduce the number of
transmissions and potential collisions... Yes they will send more so,
So What... but they sent more so they will be happier...)

****
Thomas A. Moulton, W2VY
w2vy@ram.net

155. Re: [NETSIG:2144] Re: Subnetting (X1J2 Node_IP)

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 26 Oct 1995 10:10:42 -0400
To: netsig@tapr.org

Message-ID: <199510261410.KAA10189@nadc.nadc.navy.mil>
Rendered body type: text/plain

>> Doug, we are already up to 5 in NM. I expect to be long dead by the
>>time we reach 10.

>>Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

Yes in the desolate areas of our country this may be true but it is alittle
harder to fit in areas like EPA, NNJ, New York etc.

Using subnetting immensely helps the task of routing. I.E. a single area
using subnets on a per port or frequency basis. We do this here in EPA.
The routing becomes much easier because you just ARP for call. No static
routes are needed.

route add 44.80.8/24 ax0

With no ARP

is all that is needed as long as all subnet "8"'s are on this port.
You can have exception routes though. Unfortunately this becomes
costly in use of IP subnet addresses across an entire coordination
area. Our goal is to make even smaller "cells" inter-connected so if
we continue to use this approach it may become hard to stay within
the 63 boundry in some areas.

There is certainly not a lack of ampr.org IP addresses in general.
Some restructuring of congested areas may be required in the future.

Note that this method of routing with arp'ing allows the user to have
any hardware address (CALL) as long as it answers to their IP address.

Also note that this method of "sub" netting the ampr.org class 'A'
address space goes against the definition of the class 'A' networks.
This is what we have to work from though and whatever makes it work
better is a help.

Doug

156. Re: [NETSIG:2119] Re: TNC-based compression

From: "Brian A. Lantz" <brian@lantz.com>
Date: Thu, 26 Oct 1995 11:04:54 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951026110021.7696N-100000@lantz.com>
Rendered body type: text/plain

On Tue, 24 Oct 1995, Tom Moulton wrote:

> Is there interest in forming a group to discuss adding compression to our
> AX25 operations? This is another area which Hams have fallen behind...

Let's do it.....

> The easiest way I can think of is to allocate a new PID (F2?) for use
> with compression protocols.

Yep!

> One thing that we will need to do is obtain code or a license for code
> that we can share.

Agreed...

On Wed, 25 Oct 1995, Howard Goldstein wrote:

> Any thoughts about negotiation?

Simple with a separate PID. You first (if you WANT compression) send a F2
PID. If no response, send an F0, and disable using compression.

With the limitations of the TNC2's that we will be dealing with, we
should try to make SEVERAL parameters to the compression. Make them
fixed. If other superior methods/parameters are discovered, either
replace the former, or add another newer PID for the newer form.

I think Tom Ringate/K0ZXF will be interested in this, too......

```
-------------------------------------------------------
Brian A. Lantz     http://www.lantz.com     brian@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

157. Re: [NETSIG:2142] Re: IP Broadcast (X1J question)

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 26 Oct 1995 11:58:40 -0500
To: netsig@tapr.org
Message-ID: <199510261725.MAA15889@ns2.icon.net>
Rendered body type: text/plain

```
>>So with a setting of IPbroadcast 44.125.131.127, which portion of
>>the 4th octet gets ignored, 1-127 or 128-255 ?

>From Linux HOWTO:

The network address is your IP address ANDed with your netmask.
Example:

If your netmask is      255.255.255.0
and your IP Address is   44.125.131.22
                         --------------
your network address is  44.125.131.0


The broadcast address is normally your network address logically
ORed with your netmask inverted.

Example:

If your netmask is            255.255.255.0
your netmask inverted is        0.  0.  0.255
your network address is        44.125.131.0
                               ---------------
Your broadcast is              44.125.131.255

Now looking at your question, we don't know what your netmask is,
so it would be hard to advise.  But given your stated IPBroadcast
address of 44.125.131.127, we can work backwards.

Your broadcast is              44.125.131.127
your network address is        44.125.131.127
your netmask inverted is        0.  0.  0.127
your netmask is               255.255.255.128

What this says, is that your TNC with this IPBroadcast address
will respond to any broadcast to 44.125.131.0 thru 127, it will
ignore broadcasts to any other address range.

The way to set up IP addressing is to follow this tree:

1. What is the netmask for your area?   _____________________
2. What is your IP address, or block?   _____________________

Question 1 should be something like 255.255.255.0 in the simple
case, but may be more complex.  It could be 255.255.255.224.  The
first case uses all lower 8 bits for the subnet, the second uses
the lower 5 bits.

Question 2 should be something like 44.125.131.18 for one Node.
If this was issued with a netmask of 255.255.255.128, then the
broadcast address would be 44.125.131.127.  That is, your node
would respond to any 4th octet in the range of 0 - 127, and
ignore 128 - 255.

You might get a range of addresses also.  Say you asked for 4 IP
addresses on the 131 leg.  There is the regular netmask, but also
a local netmask.  In JNOS you would have two route add commands.
One route to the basic subnet, and another to your own subnet.
The ultimate, I guess, would be for the IP coordinator to issue a
block of addresses to a regional coordinator.  He then gave you
4 addresses.  Say his region was 44.125.131.0 thru 44.125.131.31
```

and your 4 came after someone elses block of 16. He would give you
44.125.131.16 thru 44.125.131.19. Your regional netmask would be
255.255.255.224 but your local subnet would be 255.255.255.252
This is because in binary your addresses would be:

```
            00010000
            00010001
            00010010
            00010011
```

and only the last two bits are significant locally.
This way you can put one route in to your local ethernet:

```
route add 44.125.131.16/30 eth0
```

To route to the guy with the first 16 might be:

```
route add 44.125.131.0/28 ax25 44.125.131.1
```

And the big kahuna, say a big X-1 on a hill:

```
route add 44.125/16 ax0 44.125.0.1
```

--

As far as I know JNOS and X-1 do not have broadcast functionality.
So the point is really academic.

And I caution you to check my math! :-)

--
Steve/n5owk

158. internet gateways

From: Jack Taylor <n7oo@hereford.ampr.org>
Date: Thu, 26 Oct 1995 12:22:26 -0500
To: netsig@tapr.org
Cc: nj7p@hereford.ampr.org
Message-ID: <199510261722.MAA25396@sys1.tapr.org>
Rendered body type: text/plain

Someone on here asked about problems associated with operating internet
gateways. The main problem, as with any relatively advanced software that's
incredibly poorly documented :-), is in getting it configured for your
particular application. The information is there, it's just that it takes a
LOT of time to find it, sort it out, and make sense out of it.   Other than
that, the requirement is for an internet connection, and a 386-33, or better
computer with a hard drive capacity dependant upon the type of O/S and XNOS
software.

My understanding is that TNOS will now run on a variety of UNIX systems, so
it's possible to have a gateway co-located on a "friendly" internet server,
thus saving some expense. Or, the gateway can be operated from any location
via a PPP connection.   Other than that, one needs a TNC or better yet an
Ottawa PI card/modem and, appropriate radio(s)/antenna(s).

Why put in an internet gateway? I'm well aware of the ham-no ham debate on
this issue and have sympathetic feelings for both sides. In our particular
case it was primarily prompted due to the isolation of being locked out of
the original statewide backbone. Others may be in rural areas and just
wanting to expand their horizons. Some may be taken with the implimentation
challange of learning new technologies. Then too, there's the aspect of
bringing your locality into a world-wide community.

Our AZGATE:NJ7P-15 (telnet to 137.80.1.23) is a member of the international
gateways group and has a few AXIP/netrom links to other gateways. It links
into the international conference network, which typically has anywhere from
20 to over 100 users in it at all times. It's starting to experiment with
providing modified packet BBS features. By this I mean it has forwarding
that primarily captures SALES and WANT items from the amateur network and
sorts them for easy review in SALES and WANT 'areas'. Additionally it
subscribes to a few ham oriented groups and digests from the internet, which
too, are sorted into individual 'areas'.   AZGATE also supports an encap
link to the world-wide DX reporting network.

By far the majority of 'customers' for reading the mail contents are NOT
local users. These come throughout north america via the internet.   Most
are attracted with the rapid ease of mail reading and the XNOS
functionality of mail organization, as compared to prevailing BBS softwares.

Thusfar local users enjoy the conference, out of area netrom and telnet features. Of these, most are netrom node explorers looking for adventure in far-off systems.

With the cost of individual internet subscriptions plunging in many areas, packet hams are signing up in ever increasing numbers. My nephew, KB7IVK in Las Vegas, unable to get through the Arizona lockouts to my station, suprised me the other night with a connect via AZGATE! We moved into the conference and was shortly joined by VA3AM in Canada, where we had an enjoyable real-time roundtable. This is an example of the very real trend W0RLI has predicted, in hams moving from radio to wire.

My nephew reported he was able to get unlimited internet access time for $24.95 per month. Prices vary, depending upon limited or unlimited access, population, and competition in a particular area. In the Tucson and Phoenix areas, unlimited access can be obtained for as low as $19.95 per month. Some areas have what is known as 'freenets' that provide free limited access.

AZGATE also sees a number of users from other areas who wish to explore the local network, or are interested in contacting friends within Arizona.

All-in-all, we feel having an OPEN internet gateway has proved to be a highly educational experience. The main on-going problem is in understanding how to configure it properly so's to make the most use of its features.

73 de Jack

159. Re: [NETSIG:2146] Re: X1J version 4 Experiments

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 26 Oct 1995 16:53:25 -0400
To: netsig@tapr.org
Message-ID: <199510262053.QAA17591@nadc.nadc.navy.mil>
Rendered body type: text/plain

I guess I was about half following this thread... I suspect that the x1j TCP/IP (I have not used it) does not have anywhere near the configuration capability of JNOS (or equiv). Therefore when you use datagram mode you are probably using an exponential backoff? and also inability to limit or tailor these backoffs.

We never seriously looked at a "netrom x1j" solution here as we have sites where a full multiport computer is used with JNOS. Of course you could always connect a computer to an X1j also.

So if you are using X1j's chained together with end to end acks and possible data loss between any sites definitely use VC mode! At least between the sites that are losing data. This will cause a site to site retry in addition to the end to end acks when using it as a TCP circuit.

Doug

160. Re: [NETSIG:2141] Re: TNC-based compression -Reply

From: "Tom Moulton" <tmoulton@ram.net>
Date: Fri, 27 Oct 95 06:16:31 EDT
To: netsig@tapr.org, tapr-tnc@tapr.org (TAPR TNC)
Message-ID: <15021573.1f7c@ram.net>
Rendered body type: text/plain

>Hmm.. We already are using a number of PID's for different
>protocols/features, selected with <?> no rhyme or reason..
>Those certainly won't go away. Picking a specific PID for
>compression doesn't tell you what other features that packet
>might be carrying. (NET/ROM, for example)
>
>I suggest that if there's an unused bit in the PID field not
>already claimed by one of the PID's in use, then the
>presence of that bit indicate compression (or maybe grab 2
>unused bits so we can eventually have the choice of up to 3
>compression schemes).
>
>For instance, I seem to remember NET/ROM using C8 (I
>don't have my docs with me, so that's probably wrong).
>That's 11001000b; setting bit 0 (10101001b; C9) would
>indicate NETROM with compression).
>
>Or am I just blowing smoke?
>

>Does someone have a list of PID's in use?
>
>Would be impossible to retrofit everything out there; you'd
>have to make it the responsibility of the
>'compression-aware' box to attempt compression, then
>back off if it didn't get the proper response from the other
>end.
>
>Comments? This really ought to go to the TNC SIG soon...
>
>73 - Orv - WB6WEY
>orv@micom.com
>
>

I would like to hear about all the PIDs in use.

I would also like to suggest that the Fx range be reserved for Stream
oriented protocols (like a TNC)

I think that F0 is the only one in use above F0

The rest are block oriented protocols.

I don't think we should slice out major parts of the PID map with bit maps.

The discussion has been going on in tnc-sig already

****
Thomas A. Moulton, W2VY
w2vy@ram.net

161. Re: [NETSIG:2141] Re: TNC-based compression -Reply

From: "Brian A. Lantz" <brian@lantz.com>
Date: Fri, 27 Oct 1995 09:46:36 -0400 (EDT)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951027094503.1955F-100000@lantz.com>
Rendered body type: text/plain

On Thu, 26 Oct 1995, Orville Beach wrote:

> Does someone have a list of PID's in use?

Hi, Orv!

Here are a list of the ones defined that xNOS knows of:

```
        PID_X25         0x01    /* CCITT X.25 PLP */
        PID_SEGMENT     0x08    /* Segmentation fragment */
        PID_TEXNET      0xc3    /* TEXNET datagram protocol */
        PID_LQ          0xc4    /* Link quality protocol */
        PID_APPLETALK   0xca    /* Appletalk */
        PID_APPLEARP    0xcb    /* Appletalk ARP */
        PID_IP          0xcc    /* ARPA Internet Protocol */
        PID_ARP         0xcd    /* ARPA Address Resolution Protocol */
        PID_RARP        0xce    /* ARPA Reverse Address Resolution Protocol */
        PID_NETROM      0xcf    /* NET/ROM */
        PID_NO_L3       0xf0    /* No level 3 protocol */
```

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:

```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

162. Re: [NETSIG:2129] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Fri, 27 Oct 1995 09:42:32 -0500
To: netsig@tapr.org
Message-ID: <199510271442.JAA01013@mercury.texoma.com>
Rendered body type: text/plain

According to Greg Jones...

<Snip>

>If the TNC-95 and other TNCs being made available that support more
>horsepower and allow alot more memory -- it should be easy. The problem
>comes becuase of the hugh momentum the current standard has.
>

Greg made a very good point here. If I understand him correctly, he's saying
that TNC-based compression is within our technical ability, but that
overcoming the inertia of the "status quo" would present the most difficulty.

To me, this suggests a need for a "fast-track" development mechanism, which
could allow us to bust through such inertia. This would require a SMALL
group of folks with the technical know-how, allied with folks with some
background in marketing and (let's be frank, here) basic propaganda
techniques.

A simplification: Simply having a better "widget" won't do you any good if
you don't have the audacity, gall, and knowlege of human behaviour needed to
effectively get it marketed (or distributed in a non-commercial environment).

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

Who you jiving with that cosmic debris?

163. Re: [NETSIG:2144] Re: Subnetting (X1J2 Node_IP)

From: Ed Southall   WD0ELL <ecs@sullivan.hwy66.com>
Date: Fri, 27 Oct 1995 21:06:17 -0500
To: netsig@tapr.org
Message-ID: <9510280447.AA03638@sullivan>
Rendered body type: text/plain

At 07:41 AM 10/26/95 -0500, Karl F. Larsen k5di wrote:
>At 07:46 AM 10/24/95 -0500, you wrote:
>>Just a reminder that the upper 2 bits of the 3rd octet is reserved!!
>>
>>That is addresses of greater than xx.xx.63.xx are not valid, at least
>>according to the ampr.org rules. Brian has tried to get this across
>>to us - some honor it some do not. I personally do in EPA.
>>
>>Doug
>>
>   Doug, we are already up to 5 in NM. I expect to be long dead by the
>time we reach 10.
>
>Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
>

     Until just a couple of years ago, the IP coordinator here in MO was
assigning addresses sequentially to any and all persons requesting them just
as NM seems to be doing now. This did not take advantage of the hierarchical
nature of IP adresses but worked OK.
     Then a second Internet/AmPRnet encap gateway came on the scene - one
via wormhole at St Louis (east side of state), the other near Kansas City
(west side of state). Routing of each randomly assigned address to the
appropriate gateway would have been an on-going nightmare so the state's
address block (44.46.x.x) was divided more or less in half geographically
(with some set-aside for special purposes) and then each half subdivided
further as required. Each frequency LAN currently has its own /24 block
(with about 254 available addresses per LAN).
     Once a hierarchical structure of this sort is in place, you really get
to see the beauty of the whole concept! 73 - Ed

      +---+
      | Edward C. Southall   New Haven MO USA |
      | Internet: ecs@hwy66.com   AmPRnet: wd0ell@wd0ell.ampr.org |
      | wd0ell@amsat.org   AX.25: wd0ell@wb0qgr.mo.usa.noam |
      +---+

164. Re: [NETSIG:2150] Re: TNC-based compression

From: Howard Goldstein <hg@penny.n2wx.ampr.org>
Date: Sat, 28 Oct 1995 07:01:08 -0400 (EDT)
To: netsig@tapr.org
Cc: brian@lantz.com,

copied.to.avoid.netsig.delays.join.us.on.tnc.sig.brian@penny.n2wx.ampr.org
Message-ID: <Pine.LNX.3.91.951028065624.258A-100000@n2wx.ampr.org>
Rendered body type: text/plain

On Fri, 27 Oct 1995, Brian A. Lantz wrote:

> On Wed, 25 Oct 1995, Howard Goldstein wrote:
>
> > Any thoughts about negotiation?
>
> Simple with a separate PID. You first (if you WANT compression) send a F2
> PID. If no response, send an F0, and disable using compression.

Do other TNCs ignore non-F0 PID I frames? TNC-2 doesn't....arrgh

[please followup to tnc-sig][you don't subscribe?]

--
Howard Goldstein <hg@n2wx.ampr.org> http://www.tapr.org/~n2wx/

165. Mounting the X1J E-Prom

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sat, 28 Oct 1995 07:10:40 -0600
To: netsig@tapr.org
Message-ID: <199510281310.HAA18547@acca.nmsu.edu>
Rendered body type: text/plain

It is important to mount the e-prom containing the X1J4 software
into the socket properly. I ran a test of this software wherein I applied
the bank switch signal to pin 15 instead of pin 1 as is proper. To my
surprise it ran! Not well, but it ran. This mis-lead me to think the
software was setup incorrectly.

To avoid this problem I suggest you buy new 28 pin sockets and
wire-wrap wire from Radio Shack. Bend pin 1 of the new socket out and attach
a length of number 30 wire to it. Attach the other end to pin 16 of the SIO
chip which is pin 8 of J5. Mount the socket properly.

Walk around the block and re-check that the bent out pin is pin 1
and not pin 15. Mount the e-prom properly with pin 1 of the e-prom going
into the new socket's pin 1 with the wire connected.

Re-check your work. You can damage a TNC by mis-mounting the e-prom.
I think I have blown out something on my Pac Comm Tiny-2.

Now apply power and look for the dim glow from the STA lamp. Connect
to the node and check out things. While you are using the Host Mode with
your lap-top connect to the node from your other system, in my case a BPQ
Switch. After connected press U and see that you are connected and so is
another connect called host. Then call the local bbs. This proves that the
node is working.

It is now likely that you have the e-prom installed properly.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

166. Re: [NETSIG:2156] Re: TNC-based compression

From: ssampson@icon.net (Steve Sampson)
Date: Sat, 28 Oct 1995 10:10:14 -0500
To: netsig@tapr.org
Message-ID: <199510281509.KAA26869@ns2.icon.net>
Rendered body type: text/plain

>A simplification: Simply having a better "widget" won't do you any good if
>you don't have the audacity, gall, and knowlege of human behaviour needed to
>effectively get it marketed (or distributed in a non-commercial environment).

What's the appeal in TNC compression? I don't get it. Is this an attempt
to improve the speed of low speed packet? Instead of trying to put a bigger
carburetor on the engine, or even a bigger engine, I still picture the road
as two lane and winding. The alternative is to cut a path through the woods
with bulldozers, and make a 4 lane expressway. You can only do so much with
the vehicle, and then you need to fix the basic infrastructure.

In other words, increasing the bandwidth will do more than hot rodding a

TNC node device.

Would you really care that a 1 Mbps circuit used compression or not? How about 10 Mbps?

There are two products missing from the amateur market. The first is a plug and play repeater controller card (this combined with a commercial repeater is all you need for 19.2 kbps packet, the basic low speed design. The other is spread spectrum Part 15 devices run into 50 Watts, for your basic 1 Mbps LAN or backbone. This is the bulldozed 4 lane equivelant. These can come in half-duplex Omni designs, or full-duplex point-point heads.

Wouldn't that be a better goal than jacking up the rear end of a Z-80?

--
Steve/n5owk

167. SIO Programming

From: ssampson@icon.net (Steve Sampson)
Date: Sat, 28 Oct 1995 11:36:34 -0500
To: netsig@tapr.org
Message-ID: <199510281636.LAA27912@ns2.icon.net>
Rendered body type: text/plain

I don't have an SIO programming manual, but I was looking at the X-1 source code last night. Concerning the preset SIO values, there is a difference between what the X-1 uses for its radio port and what K3MC used in his KISS software. The difference is:

REG	X-1	KISS
5	0xE1	0xE9
3	0xD9	0xC9

What are the extra bits for?

P.S. Anyone have the SIO manual in computer form?

--
Steve/n5owk

168. Previous Inquiry about Gracilis PackeTen

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Sat, 28 Oct 95 13:45:51 UTC
To: netsig@tapr.org
Message-ID: <8895@paccomm.com>
Rendered body type: text/plain

About a week ago there was an inquiry about how to get hold of Gracilis in regard to their PackeTen. I have answered that message privately.

I'd like to publish the following for the benefit of the SIG members and to generally help getting the word around.

PacComm has assumed manufacturing and marketing of the Gracilis product line as of last May. (The deal had been in effect informally for some months before that). Gracilis still maintains and upgrades the software and is involved deeply in new product development.

You may reach PacComm at the addresses below, or you may address email to gracilis@paccomm.com. We are just starting to build a Web page. Look for that at http://www.paccomm.com/info

There has been a Gracilis mailing list which has gone inactive. I'm encouraging folks to make it active again.

Listproc@knuth.mtsu.edu
subscribe gracilis-l name

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

+(813) 874-2980   Fax:+(813) 872-8696   BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

169. Data Compression

From: rwhiting@winternet.com (Rick Whiting)
Date: Sat, 28 Oct 1995 18:12:38 -0500
To: netsig@tapr.org
Message-ID: <199510282312.SAA13456@icicle>
Rendered body type: text/plain

Re adding compression to TNC's. I think a good case can be made for not adding compression to the DCE (TNC). I suggest that compression be left to a higher protocol level in the DTE. That puts compression where there's lots of processing power. And it makes it easier to upgrade to future improvements. As they say, it's only software! If compression is embedded in the DCE (telephone modem style, e.g., V.42bis) you are much more at the mercy of the hardware vendor and limited by the DCE's memory and processing power.

On another note, take a look at what the V.34 28.8 Kbps phone modem folks are doing with "enhancements" to the tried and true LZ78-based V.42bis scheme: throughputs to 230.4 Kbps and more, depending on who's marketing hype you choose. Of course, the compression depends on the nature of the data. With V.42bis you are lucky to push 4:1 on your text files in real life.

And another thing, if the compression is in the DCE keep in mind that not everyone has a 16550 UART in their DTE's serial port. And even if they do, the 16550 is limited to 115.2 Kbps. So if the compression is in the DTE you won't be bumping into the serial port bottleneck. Of course if you're using 1200 bps packet, you're not going to tax any UART no matter what you do...

Food for thought, I hope.

Richard A. (Rick) Whiting	Phone: + 1 612 550 1213
5780 Rosewood Ln. N.	E-mail: rwhiting@winternet.com
Plymouth, MN 55442-1411	Packet: W0TN @ WB0GDB.MN.USA.NOAM
U.S.A.	Fax: Number on request

170. Re: [NETSIG:2160] Re: TNC-based compression

From: dkelly@iquest.com (David Kelly)
Date: Sat, 28 Oct 1995 21:23:29 -0500
To: netsig@tapr.org
Message-ID: <v01530502acb893e8508e@[204.177.193.231]>
Rendered body type: text/plain

>Would you really care that a 1 Mbps circuit used compression or not? How
>about 10 Mbps?

Actually, yes. Most T1 internet ftp'ing I do is of gzipped files if available that way. Some ftp sites will tar and gzip a directory tree on the fly but I avoid gzipping in consideration of other users as CPU is usually more precious than net.

Which correctly answers your question with both "yes" and "no" answers.

Its harmless enough for those who are interested to implement compression in the TNC but I doubt it will ever happen. Most of those calling for compression just want a free boost to data thruput and are not those who would actually implement it.

--
David Kelly N4HHE, n4hhe@amsat.org, dkelly@iquest.com
==========
To invent, you need a good imagination and a pile of junk.
-- Thomas Edison

171. Re: [NETSIG:2161] SIO Programming

From: Mike Cheponis <mac@ns1.wireless.com>
Date: Sat, 28 Oct 1995 20:24:46 -0700 (PDT)
To: netsig@tapr.org
Message-ID: <199510290324.UAA05441@ns1.wireless.com>
Rendered body type: text/plain

Steve Sampson says:
>code last night. Concerning the preset SIO values, there is a difference
>between what the X-1 uses for its radio port and what K3MC used in his KISS
>software. The difference is:
>
>| REG	X-1	KISS
5	0xE1	0xE9

>   3   0xD9   0xC9
>
>What are the extra bits for?

Steve, WR5 bit 0x08 is TX enable. TNC-2 kiss can do full duplex. I don't know where X-1 does TX enable, but it must be in the code somewhere.

WR3 bit 0x10 is "Enter Hunt Mode". The chip starts to look for 0x7E characters in the received data stream.

My guess is that X-1 enables the transmitter and enters hunt mode programmatically.

-Mike K3MC

172. Re: [NETSIG:2157] Re: Subnetting (X1J2 Node_IP)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 29 Oct 1995 04:59:17 -0700
To: netsig@tapr.org
Message-ID: <199510291159.EAA07955@acca.nmsu.edu>
Rendered body type: text/plain

At 08:45 PM 10/28/95 -0500, you wrote:
>At 07:41 AM 10/26/95 -0500, Karl F. Larsen k5di wrote:
>>At 07:46 AM 10/24/95 -0500, you wrote:
>>>Just a reminder that the upper 2 bits of the 3rd octet is reserved!!
>>>
>>>That is addresses of greater than xx.xx.63.xx are not valid, at least
>>>according to the ampr.org rules. Brian has tried to get this across
>>>to us - some honor it some do not. I personally do in EPA.
>>>
>>>Doug
>>>
>>   Doug, we are already up to 5 in NM. I expect to be long dead by the
>>time we reach 10.
>>
>>Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
>>
>
>   Until just a couple of years ago, the IP coordinator here in MO was
>assigning addresses sequentially to any and all persons requesting them just
>as NM seems to be doing now. This did not take advantage of the hierarchical
>nature of IP adresses but worked OK.

        Yes we used to do it that way. But with a simple subnet setup wherein the state was divided into 4 quadrants. Every quadrant had a diffined third number. Here it was 44.30.2.X so we had 256 IP numbers in each quadrant.

>   Then a second Internet/AmPRnet encap gateway came on the scene - one
>via wormhole at St Louis (east side of state), the other near Kansas City
>(west side of state). Routing of each randomly assigned address to the
>appropriate gateway would have been an on-going nightmare so the state's
>address block (44.46.x.x) was divided more or less in half geographically
>(with some set-asides for special purposes) and then each half subdivided
>further as required. Each frequency LAN currently has its own /24 block
>(with about 254 available addresses per LAN).

        I don't know if it was the Gateway thing, NM has 4 Internet/AmPRnet systems, or just that Tim Baggett learned how to do it, but we now are operating on a bit-wise subnet with 65 IP numbers per area. We use a lot of 44.30.2.65/28 in our x1j nodes now and I see the opportunity for one line route add's that send all the packets to a town automatically.

        At present I can connect to Pheonix AZ using x1j nodes. 350 miles from here. I have just 1 route add line in my NOS for everyone there!

>   Once a hierarchical structure of this sort is in place, you really get
>to see the beauty of the whole concept! 73 - Ed
>
        That's the truth Ed. But you get a headack writing and lining up all those 1 and 0's...:-)

```
>      +---------------------------------------------------------------+
>      | Edward C. Southall           New Haven MO USA                 |
>      | Internet: ecs@hwy66.com      AmPRnet: wd0ell@wd0ell.ampr.org  |
>      |           wd0ell@amsat.org   AX.25: wd0ell@wb0qgr.mo.usa.noam |
>      +---------------------------------------------------------------+
>
>

Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
```

173. Re: [NETSIG:2149] Re: Subnetting (X1J2 Node_IP)

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 29 Oct 1995 05:15:01 -0700
To: netsig@tapr.org
Message-ID: <199510291215.FAA08016@acca.nmsu.edu>
Rendered body type: text/plain

```
At 11:44 PM 10/27/95 -0500, you wrote:
>>>  Doug, we are already up to 5 in NM. I expect to be long dead by the
>>>time we reach 10.
>
>>>Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
>
>
>Yes in the desolate areas of our country this may be true but it is alittle
            ^^^^^^^^^^^^^^

        We are not in a desolate area. We just have more room/person, or
animal or bird ect.



>harder to fit in areas like EPA, NNJ, New York etc.
>
>Using subnetting immensely helps the task of routing. I.E. a single area
>using subnets on a per port or frequency basis. We do this here in EPA.
>The routing becomes much easier because you just ARP for call. No static
>routes are needed.
>
>route add 44.80.8/24 ax0

        Doug in desolate NM we are subnet down to:

route add 44.30.2.129/28

 which puts just 65 ip numbers in every subnet and allows easy routing. But
the subneting must be done bit by bit. For example 44.30.2.0/28 is a subnet.
44.20.2.65/28 is another subnet.

>
>With no ARP
>
>is all that is needed as long as all subnet "8"'s are on this port.
>You can have exception routes though. Unfortunately this becomes
>costly in use of IP subnet addresses across an entire coordination
>area. Our goal is to make even smaller "cells" inter-connected so if
>we continue to use this approach it may become hard to stay within
>the 63 boundry in some areas.
>

        You need the smaller subnet concept.


>There is certainly not a lack of ampr.org IP addresses in general.
>Some restructuring of congested areas may be required in the future.
>
>Note that this method of routing with arp'ing allows the user to have
>any hardware address (CALL) as long as it answers to their IP address.
>
>Also note that this method of "sub" netting the ampr.org class 'A'
>address space goes against the definition of the class 'A' networks.
>This is what we have to work from though and whatever makes it work
>better is a help.
>
>Doug
```

>
        If it would help I will try and write a paper on bit-wise subnet
design. It is simple IF you are used to using difernet number bases. But
most people are not.

Karl F. Larsen -------------- k5di@acca.nmsu.edu -------------------------->

174. Re: [NETSIG:2160] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Sun, 29 Oct 95 08:43:20 EST
To: netsig@tapr.org
Message-ID: <15021573.1f9d@ram.net>
Rendered body type: text/plain

>
>Wouldn't that be a better goal than jacking up the rear end of a Z-80?
>
>--
>Steve/n5owk
>

next time you use a dial up modes stick at 2400 baud, that's abut what
you will get Without compression...

People have 1200baud stuff, don't want to get better radios so they can
go 9600+, compression WILL help, after all it's only an EPROM change...

****
Thomas A. Moulton, W2VY
w2vy@ram.net

175. Closed v/s Locked Out

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 29 Oct 1995 06:04:32 -0700
To: netsig@tapr.org
Message-ID: <199510291304.GAA08208@acca.nmsu.edu>
Rendered body type: text/plain

It is evident that some confusion surrounds the use of built in
features on packet radio nodes to deny certain hams access to the node. And
it is important to understand what is being done and why.

        The first lock out method showed up on the nodes from NJ7P at
version 2.06 or about. This method worked with ham callsigns. If the node
SySop wanted to deny K5DI access to a node, he could do so. He could deny
many access to his node, but it took space in ram in the TNC so there is a
practical limit to how many are excluded.

        This first lock out was used against my call by n5ngz because he
wanted no bbs traffic on his nodes. It was effective. But he could have just
told me not to use his nodes for forwarding and I would have complied...

        Being locked out by call sign is rather like being black balled out
of a club by name. It is personal! A person has taken action against another
person.

        So this is the first kind of lock out. It was used to try and
control access to closed backbones but SySop's get tired of adding call
after call to the lock out list.

        Then came the X1 nodes. They have a much more useful lock out system
for a backbone system. Instead of being based on individual lock by
callsign, this lock out is general. It can be set to lock out EVERYONE
trying to up-connect to this node EXCEPT a list of call signs that CAN do
so. Consider such a backbone running through an area with lots of packet
hams, like Pheonix, AZ. Hams LOVE to tinker. So a few 10's of guys will try
to connect to the backbone since it is there. But since the node will only
talk to the other nodes it works with, they fail.

        This kind of lock out is not personal. It locks out EVERYONE. It is
easy to implement and Hams can be made to understand that they can connect
on this frequency but not on the other frequency. It helps set up a network.
This can and should be used where the network benifits from protection.

        But also be careful. If you exclude hams from connecting to all the
9600 baud nodes then your slowing down the spead of 9600 baud use. I will

explore the X1J version 4 lockout capability with my desktop system. But I need to hook my HT to firm power. The node disappears when the battery runs down...

Karl F. Larsen ---------- k5di@acca.nmsu.edu ---------->

176. Re: [NETSIG:2159] Mounting the X1J E-Prom

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Sun, 29 Oct 95 09:17:00 UTC
To: netsig@tapr.org
Message-ID: <8963@paccomm.com>
Rendered body type: text/plain

Re Karl's adventure with Pin 15 vs Pin 1 for X1 bankswitching:
The TINY-2 (since rev 1.8 - about 2-3 years ago) and all revs of the SPIRIT-2 have a bankswitch jumper. Move the jumper and don't bother with lifting pins, etc. For earlier models you have to follow the bank switch instructions in X1 documentation.

You'd be amazed at the number of calls we get regarding how to do the EPROM modification on new units which have the jumper!

Karl has 1991 model TINY-2s, so the above doesn't apply to him.

_ _
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

PacComm Packet Radio Systems, Inc. +(813) 874-2980 Fax:+(813) 872-8696
4413 N. Hesperides St. BBS: +(813) 874-3078 (V.34)
Tampa, FL 33614-7618 USA info@paccomm.com http://www.paccomm.com/info

177. Re: [NETSIG:2160] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 29 Oct 1995 11:19:01 -0600
To: netsig@tapr.org
Message-ID: <199510291719.LAA20360@mercury.texoma.com>
Rendered body type: text/plain

According to Steve N5OWK ...

>>A simplification: Simply having a better "widget" won't do you any good if
>>you don't have the audacity, gall, and knowlege of human behaviour needed to
>>effectively get it marketed (or distributed in a non-commercial
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>What's the appeal in TNC compression? I don't get it. Is this an attempt
>to improve the speed of low speed packet? Instead of trying to put a bigger
>carburetor on the engine, or even a bigger engine, I still picture the road
>as two lane and winding. The alternative is to cut a path through the woods
>with bulldozers, and make a 4 lane expressway. You can only do so much with
>the vehicle, and then you need to fix the basic infrastructure.
>

Everybody has a different idea about this.. I see the main appeal of TNC-based compression as it's ability to be easily, cheaply, and (most important) Quickly realized.
The main benefit would be to the low-speed stuff which makes up the great majority of the present packet network and user systems, but there's no particular reason why it shouldn't be useful for higher speed setups as well. While I agree that high-speed is the way to go, I DON'T see where developing tnc-based compression would have any detrimental effect on that. In fact, it could help the process by giving the average packet op a "taste" of increased throughput, while not requiring much by way of additional money or expertise.. Having had that "appetizer", he might be more likely to go on to the "main course" - A higher baud rate.
We figured out how to achieve faster baud rates quite a while back, but we still haven't figured out how to convince the average ham to use them on any wide-scale basis. TNC-based compression will give the average ham a glimpse of what lies beyond the "rut" he is presently so comfortable in, when he directly experiences the benefit of increased throughput. (In most cases, for the very first time.)
So while TNC-based compression may not be a major technical breakthrough, it should have far-reaching sociological implications within the packet community. It will certainly increase the throughput of slow speed packet systems, but that (In my mind, at least) will not be the main benefit we can expect from it's utilization.

>In other words, increasing the bandwidth will do more than hot rodding a
>TNC node device.

>
>Would you really care that a 1 Mbps circuit used compression or not? How
>about 10 Mbps?
>
>There are two products missing from the amateur market. The first is a
>plug and play repeater controller card (this combined with a commercial
>repeater is all you need for 19.2 kbps packet, the basic low speed design.
>The other is spread spectrum Part 15 devices run into 50 Watts, for your
>basic 1 Mbps LAN or backbone. This is the bulldozed 4 lane equivelant.
>These can come in half-duplex Omni designs, or full-duplex point-point
>heads.
>
>Wouldn't that be a better goal than jacking up the rear end of a Z-80?
>

Again, the two goals are complimentary, not mutually exclusive. Also, the
"fast track" development and distribution I referred to in my last post
would serve for many innovations beyond TNC-based compression, including
some of the more technically sophisticated systems Steve has described.

I think we can all agree that our ability to implement new ideas within the
packet system has fallen 'way behind our ability to come up with them. We
should be looking into that problem, and TNC-based compression would be an
excellent vehicle for some of our first steps in that direction.

The TAPR SIGs were groundbreaking, in this area... Keep digging; Keep digging!

By the way, Steve.. Your clear, concise writing style is like a breath of
fresh air on this SIG. I'm hoping to see many more of your postings in the
future.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

Hey, I'm running short on cash.. Why don't we all come up with 25 bucks apiece
and have an ugly contest?

178. Re: [NETSIG:2163] Data Compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Sun, 29 Oct 1995 11:19:05 -0600
To: netsig@tapr.org
Message-ID: <199510291719.LAA20363@mercury.texoma.com>
Rendered body type: text/plain

According to Rick...

>Re adding compression to TNC's. I think a good case can be made for not
>adding compression to the DCE (TNC). I suggest that compression be left to
>a higher protocol level in the DTE. That puts compression where there's
>lots of processing power. And it makes it easier to upgrade to future
>improvements. As they say, it's only software! If compression is embedded
>in the DCE (telephone modem style, e.g., V.42bis) you are much more at the
>mercy of the hardware vendor and limited by the DCE's memory and processing
>power.

You're right, of course. But...

A. TNC-based compression could easily be disabled by use of a software
switch, for those who would rather let thier PC's do the work. No problem there.

B. Look at BBS forwarding compression, and you'll find a mish-mash of
mutually incompatable schemes floating around. You can expect the same
problem with any PC-based compression scheme for the average packet op's
terminal program. No universal standard is likely to appear in such an
easily tinkered-with and competitive environment. It's a can of worms, which
is nice for development purposes but pure poison for standardized,
widespread utilization.

C. The limitations inherent in putting the compression in the TNC would be
more than offset by it's universal availability to all users, no matter what
computer, software, operating system, or even dumb terminal they have
developed a strong preference for. It doesn't depend on an assumption that
everyone will be using the same terminal hardware or software. That's a big
plus which nothing else can offer, or even approach.

(Snip)

>

>And another thing, if the compression is in the DCE keep in mind that not
>everyone has a 16550 UART in their DTE's serial port. And even if they do,
>the 16550 is limited to 115.2 Kbps. So if the compression is in the DTE you
>won't be bumping into the serial port bottleneck. Of course if you're using
>1200 bps packet, you're not going to tax any UART no matter what you do...
>

A good point. I would expect, though, that by the time really high-speed
packet becomes a widespread reality, PC comm ports will have already seen
some advancement as well, or we will have gone over to using HDLC cards,
bypassing that limitation.

BY THE WAY, GUYS... I'd like to take this opportunity to point out that
TNC-based compression is NOT my idea. I'm not that clever.
The only thing I've done is to get behind it and "push" a little, and
anybody can do that. If credit or blame for the original idea must be
assigned, look elsewhere.
Almost everybody already knows this, but I don't see any harm in pointing it
out.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

Hey, I'm running short on cash.. Why don't we all come up with 25 bucks apiece
and have an ugly contest?

179. Re: [NETSIG:2161] SIO Programming

From: "Tom Moulton" <tmoulton@ram.net>
Date: Sun, 29 Oct 95 16:18:31 EST
To: netsig@tapr.org
Message-ID: <15021573.1fa5@ram.net>
Rendered body type: text/plain

>I don't have an SIO programming manual, but I was looking at the X-1 source
>code last night. Concerning the preset SIO values, there is a difference
>between what the X-1 uses for its radio port and what K3MC used in his KISS
>software. The difference is:
>
>   REG   X-1   KISS
>   ---   ----   ----
>   5   0xE1   0xE9
>   3   0xD9   0xC9
>
>What are the extra bits for?
>
>P.S. Anyone have the SIO manual in computer form?
>

I do not have an electronic version...

Reg 3 D9 = 8 Bits/char, Enter Hunt, RX CRC Enable, RX Enable
      C9 = Same w/o Enter Hunt Mode

Reg 5 E1 = DTR Active, TX 8 Bits/Char, TX CRC Enable (RTS Off), TX Disabled
      E9 = Same AND TX Enable

There should be differences in the interrupt code to handle the differences.
The Hunt Mode is not usefull with things other than single byte address.

****
Thomas A. Moulton, W2VY
w2vy@ram.net

180. Re: [NETSIG:2159] Mounting the X1J E-Prom

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Sun, 29 Oct 1995 16:25:05 -0400
To: netsig@tapr.org
Message-ID: <199510292025.QAA20410@bud.peinet.pe.ca>
Rendered body type: text/plain

>   To avoid this problem I suggest you buy new 28 pin sockets and
>wire-wrap wire from Radio Shack. Bend pin 1 of the new socket out and attach
>a length of number 30 wire to it. Attach the other end to pin 16 of the SIO
>chip which is pin 8 of J5. Mount the socket properly.
>
>   Walk around the block and re-check that the bent out pin is pin 1
>and not pin 15. Mount the e-prom properly with pin 1 of the e-prom going
>into the new socket's pin 1 with the wire connected.
>

>   Re-check your work. You can damage a TNC by mis-mounting the e-prom.
>I think I have blown out something on my Pac Comm Tiny-2.
>
I have used the piggy-back idea for the Eprom sockets but found it either
gave poor connections or it spread the lower socket pins too much so that it
became intermittent with the old Eprom setup.

In one of the NEDA manuals there was a neat hint on modifying the Tiny-2 for
use with X1J. The existing Eprom socket has pin 1 connected to pin 24 at
Vcc. (B+ for you old guys)
The trace is on the top side of the board just under the top of the socket.
You can access this by cutting a piece out of the socket..be carefull and be
VERY CAREFUL cutting the trace. (also be very sure you have the correct trace)
Now you can run a jumper from pin1 of the Eprom socket to the SIO pin16
(U14) from under the board.
(Such modifications are at your own risk)

73 - Ron VE1AIC

181. Re: [NETSIG:2149] Re: Subnetting (X1J2 Node_IP)

From: David Lapp <lapp@waterloo.hp.com>
Date: Sun, 29 Oct 1995 20:56:54 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199510300156.AA047018214@hppadan.waterloo.hp.com>
Rendered body type: text/plain

>
> Also note that this method of "sub" netting the ampr.org class 'A'
> address space goes against the definition of the class 'A' networks.

It does ? How so ?

> This is what we have to work from though and whatever makes it work
> better is a help.
>
> Doug
>
>
Dave Lapp
VE3LHO

182. Re: [NETSIG:2153] Re: X1J version 4 Experiments

From: rdonnell@eskimo.com (Robert Donnell)
Date: Sun, 29 Oct 1995 18:36:53 -0800
To: netsig@tapr.org
Message-ID: <199510300235.SAA10491@mail.eskimo.com>
Rendered body type: text/plain

>I guess I was about half following this thread... I suspect that
>the x1j TCP/IP (I have not used it) does not have anywhere near
>the configuration capability of JNOS (or equiv). Therefore when
>you use datagram mode you are probably using an exponential
>backoff? and also inability to limit or tailor these backoffs.
>

actually, what X1J implements is an IP router. Since retries are handled by
the TCP layer, exponential vs. linear vs. whatever is handled in the end
users' TCP application/stack.

What I don't know is if it uses VC mode to route IP packets to the next X1J
node if the packets received as datagrams from the originating station.

We're in much the same boat here around Seattle, with several IP
lans/subnets running and each with PC-based routers to tie it all together.

73, Bob

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
----

183. Re: [NETSIG:2164] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Mon, 30 Oct 95 07:29:59 EST
To: netsig@tapr.org
Message-ID: <15021573.1fa8@ram.net>
Rendered body type: text/plain

>Its harmless enough for those who are interested to implement compression
>in the TNC but I doubt it will ever happen. Most of those calling for
>compression just want a free boost to data thruput and are not those who
>would actually implement it.

It is being discussed to be in the TNC, but it is being designed to be in
any pair of AX25 devices.

hey, we may get something done...

****
Thomas A. Moulton, W2VY
w2vy@ram.net

184. Re: [NETSIG:2164] Re: TNC-based compression

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 30 Oct 1995 06:40:41 -0700
To: netsig@tapr.org
Message-ID: <199510301340.GAA29468@acca.nmsu.edu>
Rendered body type: text/plain

I don't understand all the yammering about 10 gbyte paths and such.
I know that compression is used by FBB and has been copied by MSYS and the 2
talk to each other just fine. The compressed stuff flows over the 1200 baud
network at about twice that of straight text.

Today 100% of the users of my bbs read things in straight text. I
have no 9600 baud users. I have 30 users at 1200 baud. It would help to
speed up the user part of the bbs network.

The smart way to implement this capability is through a change in
the TNC-2 E-Prom and changes to the Kantronics TNC's and have a compatable
DOS based TSR that can be used with the user DOS terminal units. The Node
E=Prom's must also have this compression.

In fact the Node software is likely to be the sticky wicket. There
is no extra space on a TheNet 256k E-Prom. You will need to employ a 512k
E-Prom like Dave Roberts has done with his X1J system.

But it's all do-able and should be done. Winter is coming and more
time will be available for indoor fun, like coding a tnc-2 for compression.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

185. Re: [NETSIG:2164] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Mon, 30 Oct 1995 09:19:07 -0600
To: netsig@tapr.org
Message-ID: <199510301519.JAA29208@mercury.texoma.com>
Rendered body type: text/plain

According to David N4HHE...

>Its harmless enough for those who are interested to implement compression
>in the TNC but I doubt it will ever happen. Most of those calling for
>compression just want a free boost to data thruput and are not those who
>would actually implement it.

In my case, I'll readily admit to being a technically "challenged" appliance
operator. In that, though, I represent a tiny minority on this SIG. I can
hardly be described as "most" of ANYTHING here. (I mean this in the
numerical sense of "most", so you guys keep your comments to yourselves!)

;-)

So I disagree with your statement above, David. "Most" of the folks now
discussing TNC-based compression are the technically competent do-ers in the
packet community who are sometimes referred to as the "movers and shakers".
If, in the end these folks see TNC-based compression as a worthwhile goal, I
have no doubt that this same group will be in an excellent position to
implement it.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

The likelihood of the toast landing on the buttered side is directly

proportional to the value of the carpet.

186. Re: [NETSIG:2169] Closed v/s Locked Out

From: Bob Nielsen <nielsen@primenet.com>
Date: Mon, 30 Oct 1995 10:26:02 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951030102349.137B-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

On Sun, 29 Oct 1995, Karl F. Larsen wrote:

> It is evident that some confusion surrounds the use of built in
> features on packet radio nodes to deny certain hams access to the node. And
> it is important to understand what is being done and why.
>
> The first lock out method showed up on the nodes from NJ7P at
> version 2.06 or about. This method worked with ham callsigns. If the node
> SySop wanted to deny K5DI access to a node, he could do so. He could deny
> many access to his node, but it took space in ram in the TNC so there is a
> practical limit to how many are excluded.
>

Actually the lock out feature appeared in NetRom much earlier than that.
It was used extensively during the NetRom vs. TheNet wars which occured
around 1988 or so.

Bob Nielsen Internet: nielsen@primenet.com
Tucson, AZ AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen AX.25: w6swe@wb7tls.az.usa.noam

187. Re: [NETSIG:2177] Re: TNC-based compression

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 30 Oct 1995 22:18:50 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199510310418.WAA01358@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

>
> >Its harmless enough for those who are interested to implement compression
> >in the TNC but I doubt it will ever happen. Most of those calling for
> >compression just want a free boost to data thruput and are not those who
> >would actually implement it.
>

Those who do -- do.

The amateur credo could easily be:
        Those who code software and design/create hardware rule.

So if the necessary group writes something -- then something will happen.

I can;t think that developing something new can ever hurt. At least it is
progressing what we are doing. Will it be hard to implement -- probably
not. Agreeing on how to do it -- a little more difficult. Changing every
TNC in the world sold to date -- impossible (see 2400bps packet).

However, if many of the current networking technologies were to implement
the final proposed standard -- then that will begin to apply the necessary
leverage for people to change. I would think that between Tom Moulton,
Howie Goldstein, Bob Morgan, Brian Lantz and few others could make it a
reality and have enough critical mass to have things change.

Will the increase be important ? Yes...although data compression does
notnecessarily mean that we will stop looking at way of implenmting faster
user radio solutions (i.e. SS or other solutions).

Just thinking out loud.

I think it is great to see a small group working on something like this.
This is what this SIG and others are all about.

Keep up the good work folks.

Cheers - greg, WD5IVD

November 1995

Original source file: netsig.9511
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9511

1. Re: equipment

From: KN6UO@aol.com
Date: Tue, 31 Oct 1995 00:36:36 -0500
To: netsig@tapr.org
Cc: recurry@insighttec.com
Message-ID: <951031003634_79321837@mail06.mail.aol.com>
Rendered body type: text/plain

Here is a repost with permission from the TCP-Group list. I think Ron has some great ideas, and wish I had the expertise to help. I am posting this here to let you know that others are also discussing the problems and possible solutions to the current problem with packet radio. I hope this helps to keep the need for a better system in the picture here on the list.

73
Kevin Williams

In a message dated 95-10-29 13:42:49 EST, Ron Curry wrote:

>Subj: RE: equipment
>Date: 95-10-29 13:42:49 EST
>From: recurry@insighttec.com (Ron Curry)
>To: TCP-Group@UCSD.EDU (TCP-Group@UCSD.EDU)
>
>John,
>What we really need is a a complete re-design of the amatuer packet system.
>The reality is we need plug n' play high speed and with better protocols.
>Significant performance could be gained with the following changes:
>
> 1. Dump ax.25 (at least as it works today). Several hams have suggested more
> efficient protocols which reduce collisions. These need to be explored. Some
> modification of TCP/IP might work (this would be advantages considering all
>the existing software and expertise already available).
>
> 2. With an optimized link layer protocol fix the physical layer:
>
> a. Use modern modem technology designed for a CSMA type environment with
>hardware error correction. Integrate the radio. Adopt three standards and
>get manufacturers to use them:
> 1. Low speed 9600-28.8k to fit in standard voice channels. Cheap, plug
>n' play. This is the only way we will convert the broad ham community.
>Most packet users don't understand how to setup a 9600 baud packet rig
>today - that's why it had not taken off broadly. I call this Type 1.
>
> 2. Medium speed 56k - 128k to fit in 100khz channels. A little more
> expensive, plug n' play. I call this Type 2
>
> 3. High speed 128k - 1mbit to fit in 1mHz channels. More expensive,
>tweaking required. I call this Type 3
>
> 4. Higher speeds if possible - experimentation (Where we are today).
>Type 4 TBD
>
> b. Make available inexpensive low and medium speed data radios/modem
> combinations on 2m, 73cm, 900mHz, and 33cm with fast tx/rx switching.
> Ensure the software/TNC defaults to this fast switching.
>
> c. Get rid of TNC's as a required part of the protocol stack. These things
>are only in the way, add expense, and reduce performance. They are a relic
>of the days when a PC cost a lot and hams used dumb terminals for
> packet.
>Most people dedicate a computer anyway if they are running a BBS or TCP/IP
>services.
>
>4. Set up nation wide band plans specified for not just bit rate but also
>performance. In other words if someone wants to run 9600 baud with a
>bone-slow tx/rx switching synthesized radio put them all on one frequency

and
>let them have at it but set minimum standards in the band plans.
>
>Here is a back of napkin business plan:
>
>1. Assemble a team of volunteers with expertise in the following areas:
>   a. Cellular/datacomm protocol/software
>   b. High-speed modem design.
>   c. RF transceiver design.
>   d. PC software
>   e. Marketing/business
>
>2. Leverage off existing standards/silicon for the technology - most of this
>stuff is current technology we just need to adopt the right standards. Use
>the above experts to select the technology standards for the three bit rates
>recommended above.
>
>3. Start with the low speed 9600 bit/s and greater for the first design.
Make
>it cheap. Make it easy. Give it the capability to run with existing
>NOS/Baycom software. Build prototypes.
>
>4. License the design cheaply to MFJ, PacComm, TEKK, etc. Allow them to sell
>it for non-ham applications as well (that's how we get the TEKK KS-900 data
>radios at $119). Don't compete with them.
>
>5. Use this same process for Type 2,3, and eventually Type 4 RF modems.
>
>I'm willing to provide my marketing and digital/software knowledge. Anyone
>else game? Comments?
>
>Ron Curry KE6WED
>recurry@insighttec.com
>recurry@inside.intel.com
>
>----------
>From: John Lakeland[SMTP:kc6vlr@kc6vlr]
>Sent: Saturday, October 28, 1995 10:37 PM
>To: TCP-Group@UCSD.EDU
>Subject: equipment
>
>This is KC6VLR with a new station running NetMAC. It seems to me that we
need
>a
>radio TNC combination that doesn't exist yet for high speed upgrading. We're
>hams, why don't we pool our resources and design the piece of equipment we
>need
>and produce it as a kit?

2. X1J diode matrix options

From: ssharp@VNET.IBM.COM
Date: Tue, 31 Oct 95 14:47:10 EST
To: netsig@tapr.org
Message-ID: <199510312015.OAA18164@sys1.tapr.org>
Rendered body type: text/plain

We will be using up all ports on a NETRIX diode matrix board from ANS.
How does one add more ports. I've heard fanout is a problem after
6 TNC's. I've heard of some installations were 2 TNC's were wirelined
together to join two matrixes. This seem real expensive. I was thinking
one could build a circuit out of 2 max232 chips wired back to back
to join 2 matrixes.

A second thing that concerns me is that I have read this is only good
for stacks that have low traffic, as packet collisions be come a problem
on the RS-232 side. What is considered low traffic ???

Any info about get more than 6 TNC's in a stack would be greatly appreciated.
BTW, they are not all Paccomm's so there coaxlan is not an option.

Thanks and 73's
Steve, N1PBS

3. Re: [NETSIG:2178] Re: TNC-based compression

From: ssampson@icon.net (Steve Sampson)
Date: Wed, 01 Nov 1995 15:04:24 -0600
To: netsig@tapr.org
Message-ID: <199511012103.PAA05042@ns2.icon.net>

Rendered body type: text/plain

Karl says:
> I don't understand all the yammering about 10 gbyte paths and such.
> I know that compression is used by FBB and has been copied by MSYS and the 2
> talk to each other just fine. The compressed stuff flows over the 1200 baud
> network at about twice that of straight text.

So two times the throughput is all you ask?

That leads us to the solution. What would you rather have to speed up packet
two times: 1) Compression, or 2) Bandwidth.

I do not wish to appear as throwing water on the discussion. My opinion
counts for very little. I remember the old Sgt's saying: "Be careful what
you ask for, you may get it." I just went to a job interview last week, and
the same thought came to mind, only in this case it was "You never get the
things you don't ask for." I may never get the job, but at least they know
what I consider my worth.

But the addition of compression to the network layer, for a network that is
permanently and forever going to be 1.2 kbps, then maybe this is a good idea.
I say network layer, because getting the TNC manufacturers to support this
feature will take years. First it has to be proven in the field. And this
then really does provide a working lab to evaluate compression. It will also
be a good time to abandon the AX.25 layer. The discussion about PID seems
to assume that the network layer will be AX.25. Couldn't the access channel
be AX.25 for the clear-text TNC, and simultanously Z.96 for the network
channel? (Z.96 - I just made that up). Here's the perfect opportunity to
link 1.2kbps nodes using a TCP/IP based linking layer.

If you could design the MAC layer of a new radio link protocol, how would you
design it? Is AX.25 the best that there is? How does your design work in the
presense of multiple nodes on one frequency that can't hear each other?

--
Steve/n5owk
"Just blowing smoke and yammering"

4. Re: [NETSIG:2184] Re: TNC-based compression

From: Ron Atkinson <n8fow@hamgate.cc.wayne.edu>
Date: Thu, 2 Nov 1995 06:47:15 GMT
To: netsig@tapr.org
Message-ID: <199511020647.GAA23342@hamgate.cc.wayne.edu>
Rendered body type: text/plain

In article <199511012103.PAA05042@ns2.icon.net> you wrote:
: Karl says:
: > I don't understand all the yammering about 10 gbyte paths and such.
: > I know that compression is used by FBB and has been copied by MSYS and the 2
: > talk to each other just fine. The compressed stuff flows over the 1200 baud
: > network at about twice that of straight text.
:
: So two times the throughput is all you ask?

That's about all you'll usually get, mostly less.

: That leads us to the solution. What would you rather have to speed up packet
: two times: 1) Compression, or 2) Bandwidth.

Bandwidth of course. I certainly prefer more bandwidth and higher
speeds anyday over trying to run compression, but there are reasons to
run and also times to run compression.

If someone is on your typically packet LAN with hidden terminals and
lousy thruput, compression just doesn't really help at all. Mostly it's
just an illusion that you're getting more thruput, but with all the
retries and delays in transmissions due to poor LANs, the thruput just
doesn't increase. This is just like going from 1200 up to 9600 when
everyone is all on the same frequency. You get retries galore and
terrible thruput, but when the data finally does come in it just appears
on your screen fast, but your thruput isn't anywhere near 8 times better
than what it was before. The data appearing on your screen faster in
bursts make it an illusion that you're really getting good thruput.
Compression isn't really worth it until you fix your RF links.

If you have a rock solid RF link with no hidden terminals, you can blast
away aggressively (on a LAN where everyone hears each other you can do
that without bothering each other), this is where compression is
actually noticeable. You need to get the RF links running properly

first though (you'll probably notice a significant increase in
performance anyways, and you may not be all that much interested in
compression until the novelty of your 'new-found' speeds wears off), and
then you'll get real results and compression becomes an advantage.

I did some simple tests with phone modems one day by running LZV
compression with PPP to give an idea whether compression is going to
really improve anything with both ascii and binary files. I didn't feel
like going through the headaches of setting it up over the air and test
it (I remotely configured the other Linux system on the phone line), but
I plan on getting around to it. The only reason for runnning
compression in the first place was because we were already pushing the
data as fast as it could go and I wanted to see if I can gain anything
out of it and be worthwhile to run. There were a lot of variables and it
was a crude test, but it was typically about 35% or so on average
(depends a whole lot on the files being transfered, some are up into 50
some % range). If you have a web browser that supports tables you can
point it to http://hamgate.cc.wayne.edu/gateway/ipip-lzv.html to see
what I was messing with. The lastest PPP code for Linux and other
platforms also contain a BSD compression module now, I plan on sometime
soon doing tests with and without it to see if it's really worth running
or not. I really need to come up with a decent way to test things
though instead of just regular files transfers :)

Quite a while ago I did a similar test, but I did run it over radios on
a slow link that was marginable (your typically packet link). I never
finished testing and never put results together because it was very
noticeable that it was a waste of time. Compression shouldn't be used
to fix a broken problem, like some terrible RF link with hidden terminals
and retries, it should be used to exceed the capabilities of an existing
good RF link. Fix your LAN's first.

Ron N8FOW

5. Re: [NETSIG:2184] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 02 Nov 95 07:27:11 EST
To: netsig@tapr.org
Message-ID: <15021573.1fcc@ram.net>
Rendered body type: text/plain

>I say network layer, because getting the TNC manufacturers to support this
>feature will take years. First it has to be proven in the field. And this
>then really does provide a working lab to evaluate compression. It will als
>o
>be a good time to abandon the AX.25 layer. The discussion about PID seems
>to assume that the network layer will be AX.25. Couldn't the access channel
>be AX.25 for the clear-text TNC, and simultanously Z.96 for the network
>channel? (Z.96 - I just made that up). Here's the perfect opportunity to
>link 1.2kbps nodes using a TCP/IP based linking layer.

You might be suprised how quickly we are going to get this one available.
I doubt it will take years.

Also just because we talked about using a different PID does not require
that the Network layer be AX25, which is only a link layer protocol.

BTW the current extensions do not use a new PID.

****
Thomas A. Moulton, W2VY
w2vy@ram.net

6. Re: [NETSIG:2184] Re: TNC-based compression

From: pipe2@oeonline.com
Date: Thu, 2 Nov 95 19:37 EST
To: netsig@tapr.org
Message-ID: <m0tBA8F-0003H7C@oeonline.oeonline.com>
Rendered body type: text/plain

<stuff deleted>
>If you could design the MAC layer of a new radio link protocol, how would you
>design it? Is AX.25 the best that there is? How does your design work in the
>presense of multiple nodes on one frequency that can't hear each other?

A freind of mine and I are working on a token passing system for backbone
links. His idea for handling nodes that can't be heard is to use some
statistical analysis of the channel to determin when there will be a
collision and to not send a packet there. This idea came from the digital

system that predicts noise (I know that sounds strange). My part of the
system is the token passing part, which makes collisions impossible if all
the nodes are using point-to-point links. I am planning to expieriment with
it on RF on some multi-megabit links next summer. Right now I am testing on
RS-485 links. I have a working system (mostly), and am currently working on
ways to handle token regeneration and prediction of when and where a token
will be lost. Overhead is extreamly low in this system. I am NOT building
this to work in a normal TNC since I plan to build a companion multi-magabit
link to use in conjunction with the system. I live in a packet dead zone
(only 2 netrom nodes I can connect to, and very little IP). This makes me
nuts 'cause I like to expieriment with digital devices.

Maybe all will benefit from what annoys me ;-) All I need to do is connect
my area (Detroit, MI), to the nearest city with major packet links (Dayton,
OH). I have found some others who want to help out, which is good since
establishing a microwave multi-megabit link all the way down there will be
difficult. Time to move amateur digital to the next level!

        -Bill kb8wyp

7. (no subject)

From: pipe2@oeonline.com
Date: Thu, 2 Nov 95 19:43 EST
To: netsig@tapr.org
Message-ID: <m0tBAE6-0008SlC@oeonline.oeonline.com>
Rendered body type: text/plain

<stuff deleted>
>If you could design the MAC layer of a new radio link protocol, how would you
>design it? Is AX.25 the best that there is? How does your design work in the
>presense of multiple nodes on one frequency that can't hear each other?

A freind of mine and I are working on a token passing system for backbone
links. His idea for handling nodes that can't be heard is to use some
statistical analysis of the channel to determin when there will be a
collision and to not send a packet there. This idea came from the digital
system that predicts noise (I know that sounds strange). My part of the
system is the token passing part, which makes collisions impossible if all
the nodes are using point-to-point links. I am planning to expieriment with
it on RF on some multi-megabit links next summer. Right now I am testing on
RS-485 links. I have a working system (mostly), and am currently working on
ways to handle token regeneration and prediction of when and where a token
will be lost. Overhead is extreamly low in this system. I am NOT building
this to work in a normal TNC since I plan to build a companion multi-magabit
link to use in conjunction with the system. I live in a packet dead zone
(only 2 netrom nodes I can connect to, and very little IP). This makes me
nuts 'cause I like to expieriment with digital devices.

This system will use compressing in the form of Stac Electronic's LZW chip.
Packet handling/MAC/stats will be handled by an i960 proccessor. The "TNC"
part will act as a router, and will be accessible to packet users as an IP
router or a ROSE switch. This will let any current packet system take
advantage of the megabit-speed backbone that it will route to. No normal
packet protocols will be on the backbone, only the tokens and the systems
own packets. Everything will be encapsulated in the system's packets by the
routers. I am still debating on building a version that will work at lower
speeds. My goal is to build a system that can work as a 'Super Backbone'
that can pass all types of packet traffic (BBS forwarding, netrom, IP,
AX.25....). The IP router will handle IP packets efficently while the
ROSE-like part will allow all the other types of packets to pass. This
system is the ideal inter-city/inter-state backbone.

Maybe all will benefit from what annoys me ;-) All I need to do is connect
my area (Detroit, MI), to the nearest city with major packet links (Dayton,
OH). I have found some others who want to help out, which is good since
establishing a microwave multi-megabit link all the way down there will be
difficult. Time to move amateur digital to the next level!

        -Bill kb8wyp

8. Re: [NETSIG:2182] Re: equipment

From: pipe2@oeonline.com
Date: Thu, 2 Nov 95 19:52 EST
To: netsig@tapr.org
Message-ID: <m0tBANG-000AidC@oeonline.oeonline.com>
Rendered body type: text/plain

>>What we really need is a a complete re-design of the amatuer packet system.
>>The reality is we need plug n' play high speed and with better protocols.

>>Significant performance could be gained with the following changes:

I suggest a cellular scheme. Any comments?

If each area had 7 frequencies assigned to digital you could build a
hexagonal cellular system that could allow users to connece realiably with
only a few watts (which makes for nice cheap radios :-). Connect the cells
with high speed backbones in the 128kb/s-2Mb/s range and then connect city
cell systems together with something like the token-passing system I
mentioned in a previous post. A hierarchial system is the way to go.

        -Bill kb8wyp

9. Re: [NETSIG:2020] Re: Backbone Routing Protocol (BRP)

From: Dino Darling <dinod@deltanet.com>
Date: Thu, 02 Nov 1995 18:56:17 -0800
To: netsig@tapr.org
Message-ID: <9511030355.AA24063@server1.deltanet.com>
Rendered body type: text/plain

>   All this discussion on "new" packet protocals is like blowing smoke.
>You think it's here and it ain't. It blew away. What IS here is the internet
>with tcp/ip. The IP router was invented last decade and works fine with Ham
>radio!

This is REALLY late, but I have a comment....

TCP/IP would work a whole lot better IF they revamped AX.25 or relaxed some
of the restrictions with this protocol. The one major item that holds
TCP/IP back IS AX.25!
TCP/IP is GREAT and should be able to spread its wings. "It is time Capt.
MAKE IT SO!"
Dino

10. Re: [NETSIG:2164] Re: TNC-based compression

From: colla@pec.pccp.com.ar (Pedro E. Colla)
Date: Thu, 02 Nov 1995 21:45:00 TIMEZONE
To: netsig@tapr.org
Message-ID: <m0tBDk9-00013HC@pccp.net>
Rendered body type: text/plain

>>Would you really care that a 1 Mbps circuit used compression or not? How
>>about 10 Mbps?

I think the technology for end users to achieve that sort of bandwidth
is still far into the future, and no matter how big you draw your 4 lines
highway if the exit 25b is still a narrow unpaved road, bottlenecks will
occur.

However, most of the traffic (i.e. forward, download) is already
compressed, so the benefits might be borderline.

But, it could make for a hell of a fun as an experiment; a quick prototyping
could be 'easily' done with the development of a MBBIOS compliant
(or a WA8DED compliant for that matter) driver driving a KISS TNC, the
driver would handle the compression and handshaking with the partner, an
specific PID could be easily accomodated with such approach.

That could allow a big reuse of the existing software and hardware with
a relatively small software piece; current end user terminal technology
allows such tricks as well as most established BBS code around.

A hardware solution might have some interesting sides but in the long run
could become a drag.

Best Regards. Pedro.

PS: BTW, don't forget the PACSAT protocol PIDs in your list.

Pedro E. Colla - (1846) Adrogue - Buenos Aires - Argentina   [GF05TE]
Packet: LU1BUV@LU1BUV.#ADR.BA.ARG.SOAM   Home: colla@pec.pccp.com.ar

11. Re: [NETSIG:2188]

From: jra@ag9v.ampr.org
Date: Fri, 3 Nov 1995 08:01:54 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199511031301.IAA06940@ag9v.ampr.org>
Rendered body type: text/plain

Bill --

When you want to start linking south, let me know.

John AG9V in Dayton

You (udcps!oeonline.com!pipe2) write:
>
>Maybe all will benefit from what annoys me ;-) All I need to do is connect
>my area (Detroit, MI), to the nearest city with major packet links (Dayton,
>OH). I have found some others who want to help out, which is good since
>establishing a microwave multi-megabit link all the way down there will be
>difficult. Time to move amateur digital to the next level!
>
>   -Bill kb8wyp
>

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

12. Re: [NETSIG:2185] Re: TNC-based compression

From: "Brian A. Lantz" <brian@lantz.com>
Date: Fri, 3 Nov 1995 07:56:06 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951103074412.24194C-100000@lantz.com>
Rendered body type: text/plain

On Fri, 3 Nov 1995, Ron Atkinson wrote:

> In article <199511012103.PAA05042@ns2.icon.net> you wrote:
> : Karl says:
> : > I don't understand all the yammering about 10 gbyte paths and such.
> : > I know that compression is used by FBB and has been copied by MSYS and the 2
> : > talk to each other just fine. The compressed stuff flows over the 1200 baud
> : > network at about twice that of straight text.
> :
> : So two times the throughput is all you ask?
>
> That's about all you'll usually get, mostly less.

Ron touched on this, let me make the point (as I see it) clearer.....

Experience has proved that you take an area with conjested 1200 baud, and
add the ability to step up to 9600 baud, soon you have conjested 9600
baud. Sure, if the number of users is the same, it IS faster, but not
radically. Add an inexpensive way to step up to 56K, and soon you will
probably have conjested 56K.

Remembering that the nature of packet is analgious to a party-line
telephone (not many of THOSE around anymore, huh) may help clarify. Most
network facilities are either already using point-to-point links, or are
heading in that direction (like private-line telephones).

Even moving up to a 10 Gbyte speed can simply place you on a higher speed
conjested path.

Whether compression is used/needed/desired is kinda immaterial. What will
be proposed is an extension to AX25 Link Level, Version 2.0, adding the
ability to Negotiate *NEW* facilities (features) at the link layer, which
will allow compression. It will also allow any OTHER facilities to be
negotiated that can be thought of today or in the future.

This GENERAL capability will add so much flexibility to the link level,
that it should spur on experimentation at the link layer, whether it be
compression, FEC, etc.

And by making it backwardly compatible with the existing spec, we
anticipate very low resistence from vendors (several have thrown in
support, already), and surprisingly soon support in firmware and software
products.

Is compression the end-all solution the world needs? Nope! But in
providing a way for this kind of experimentation to occur (without having
to wait for a whole new link level to be developed) this COULD generate
ideas and technologies that COULD be a solution that no one is currently

even considering.....

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

13. Re: [NETSIG:2190] Re: Backbone Routing Protocol (BRP)

From: "Brian A. Lantz" <brian@lantz.com>
Date: Fri, 3 Nov 1995 07:59:34 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951103075719.24194D-100000@lantz.com>
Rendered body type: text/plain

On Fri, 3 Nov 1995, Dino Darling wrote:

> This is REALLY late, but I have a comment....
>
> TCP/IP would work a whole lot better IF they revamped AX.25 or relaxed some
> of the restrictions with this protocol. The one major item that holds
> TCP/IP back IS AX.25!

Don't just say "It don't work", give examples. NOTHING EVER gets fixed,
if the discussion of it's weaknesses are vague and overly generalized.
Share your mind (with examples) and get specific........

I have little grief with AX25, since I can get it to pump out IP highly
efficiently.

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

14. Re: [NETSIG:2191] Re: TNC-based compression

From: "Brian A. Lantz" <brian@lantz.com>
Date: Fri, 3 Nov 1995 08:01:00 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951103080024.24194F-100000@lantz.com>
Rendered body type: text/plain

On Fri, 3 Nov 1995, Pedro E. Colla wrote:

> PS: BTW, don't forget the PACSAT protocol PIDs in your list.

Someone share it's value and we CAN add it to the list. Which PID are
they using?

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

15. Re Data Compression in TNC

From: rwhiting@winternet.com (Rick Whiting)
Date: Sat, 4 Nov 1995 16:40:13 -0600
To: netsig@tapr.org

Message-ID: <199511042240.QAA29617@icicle>
Rendered body type: text/plain

The following are some useful references on data compression:

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Richard A. (Rick) Whiting	Phone: + 1 612 550 1213
5780 Rosewood Ln. N.	E-mail: rwhiting@winternet.com
Plymouth, MN 55442-1411	Packet: W0TN @ WB0GDB.MN.USA.NOAM
U.S.A.	Fax: Number on request

16. Re: [NETSIG:2194] Re: Backbone Routing Protocol (BRP)

From: ssampson@icon.net (Steve Sampson)
Date: Sat, 4 Nov 1995 21:00:29 -0600
To: netsig@tapr.org
Message-ID: <199511050300.VAA17818@ns2.icon.net>
Rendered body type: text/plain

On Fri, 3 Nov 1995, Dino Darling wrote:
>> The one major item that holds TCP/IP back IS AX.25!

Microsoft fanatic Brian replies:
>Don't just say "It don't work", give examples. NOTHING EVER gets fixed,
>if the discussion of it's weaknesses are vague and overly generalized.
>Share your mind (with examples) and get specific........
>
>I have little grief with AX25, since I can get it to pump out IP highly
>efficiently.

Hogwash. Never happen. Well OK, I guess maybe if you define what highly efficiently really means :-)

OK I'll bite:

1. AX.25 can't pipeline.

   There appears to be a maxframe design that can pipeline up to seven frames. The design is broken, as any of the seven frames having an error will cause all frames to be resent.

2 Through 50 upon request.

I think if TNC programmers want a project that will improve packet overnight, Error # 1 is the one to tackle. It's like a pipe and a

marble. AX.25 is like putting one marble in the pipe and waiting
for it to roll down to the other end. Real pipeline is like a pipe
full of marbles, such that pushing one in causes one to fall out
at the other end.

--
Steve/n5owk
"Using my Marbles!"

17. Re: [NETSIG:2195] Re: TNC-based compression

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 6 Nov 1995 02:23:25 -0700
To: netsig@tapr.org
Message-ID: <199511060923.CAA28777@acca.nmsu.edu>
Rendered body type: text/plain

Seems like everyone commenting on this idea has little or no
experiance with REAL nodes. For example the thought that a 1200 baud packet
network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
example. Consider 2 1200 baud guys working each other. The data flows at
less than 600 baud for many reasons. They include but are not limited to:
TXD, ACK packets, Collisions, poor setup.

        Now consider a 4 node network. 300 baud? Not really. More like 100
baud when all the factors above are considered. Of course this assumes that
the network is made up of single frequency nodes; 1 radio, 1 tnc. Why assume
this? Because 90+ % of all packet nodes are of this type!

        So what can you expect from compression? I use it over that 4 node
network above, only it's 2 nodes at 1200 baud and 3 nodes at 9600 baud and
then a 1200 baud digipeat through a tcp/ip station at 1200 baud. How does it
work? Just GREAT! It is not real fast but wb7tls and I do connect Arizona to
NM that way. And it works well. We have done it with the old style of
forwarding and when we both went FBB it was a shock to see how much faster
data flowed!

        So please don't dampen the idea of using compression just because
the path is poor. 200 baud is TWICE as fast as 100 baud EVERY TIME!

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

18. Re: [NETSIG:2197] Re: Backbone Routing Protocol (BRP)

From: "Brian A. Lantz" <brian@lantz.com>
Date: Mon, 6 Nov 1995 08:28:14 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951106082413.10728G-100000@lantz.com>
Rendered body type: text/plain

On Sun, 5 Nov 1995, Steve Sampson wrote:

> Microsoft fanatic Brian replies:

Highly uncalled for....

> >I have little grief with AX25, since I can get it to pump out IP highly
> >efficiently.
>
> Hogwash. Never happen. Well OK, I guess maybe if you define what
> highly efficiently really means :-)

I guess you are calling me a liar! Too bad it doesn't concern me ;-)

I stand by my statement. Properly configured, AX25 can pump out IP highly
efficiently.

> I think if TNC programmers want a project that will improve packet
> overnight, Error # 1 is the one to tackle.

Do it, then. It's not a TNC problem, it's a spec problem. Fix it, and let
us know what it takes.

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
        while (memory_available)   {
                eat_major_portion_of_memory (no_real_reason);

```
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

19. Re: [NETSIG:2199] Re: Backbone Routing Protocol (BRP)

From: ted@rmsd.com (Ted Cross)
Date: Mon, 6 Nov 1995 08:08:54 -0700 (MST)
To: netsig@tapr.org
Message-ID: <m0tCTAM-000EasC@rmsd.com>
Rendered body type: text/plain

```
>
> On Sun, 5 Nov 1995, Steve Sampson wrote:
>
> > Microsoft fanatic Brian replies:
>
> Highly uncalled for....

Do people still use Microsoft software? Beats me why they would. Obviously
Steve, you've never seen Brian's Sig block.

>
> > >I have little grief with AX25, since I can get it to pump out IP highly
> > >efficiently.
> >
> > Hogwash.  Never happen.  Well OK, I guess maybe if you define what
> > highly efficiently really means :-)
>
> I guess you are calling me a liar! Too bad it doesn't concern me ;-)
>
> I stand by my statement. Properly configured, AX25 can pump out IP highly
> efficiently.

I agree with Brian. I have a Linux kernel based gateway configured here
feeding the North East Colorado tcp/ip backbone and it hauls ^#&$. Granted
that if the AX25 headers were removed it'd improve bandwidth usage slightly,
but for the most part no-one complains. Besides, the mechanical relay in the
Transmitter causes the most delay. Steve, if you can prove that removing
AX25 will speed up the relay let me know, I'll bow down and announce to
the world that you're smarter than me.

I'd have to say that Steve needs to learn how to configure his software and
hardware for more effeciency.

>
> > I think if TNC programmers want a project that will improve packet
> > overnight, Error # 1 is the one to tackle.
>

Don't you just hate the whiners who want everything fixed but won't fix
it themselves.

> Do it, then. It's not a TNC problem, it's a spec problem. Fix it, and let
> us know what it takes.
>
>

OK so I know I just contributed to the bitching I normally complain about,
but what the heck. So how about some tech talk.

73

Ted

--
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
! Ted Cross                       Internet: ted@rmsd.com                 !
! President                       AX25:     n0iak@n0iak.#neco.co.usa.na  !
! Rocky Mountain Systems Design  Amprnet:  n0iak@n0iak.ampr.org         !
! 33165 Diana Rd                  ====================================  !
! Pine, CO 80470              The distinction between past, present and !
! (303) 838-2608                future is only an illusion.             !
!                                              Albert Einstien          !
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

20. Re: [NETSIG:2199] Re: Backbone Routing Protocol (BRP)

From: ssampson@icon.net (Steve Sampson)
Date: Mon, 6 Nov 1995 10:52:36 -0600
To: netsig@tapr.org
Message-ID: <199511061652.KAA19044@ns2.icon.net>
Rendered body type: text/plain

>I stand by my statement. Properly configured, AX25 can pump out IP highly
>efficiently.

The problem is Brian, that the sentence doesn't mean anything.

Properly configured, Banks can pump out money highly efficiently. But
that doesn't mean that Banks are the only pump, or define what efficiently
really means.

No one knows how efficient AX.25 is, there has never been a study. So yes
anyone can say anything, because no one can prove them wrong.

C-64 Computers are highly efficient. Compared to what, is a question that
arises. You see my point yet?

The rest of your message was fairly defensive, so I will only state that it
is only my intention to have a pleasant conversation with you all, and take
a few liberties in humor, but I do not wish to appear religious on any radio
issue, or data method. I'm completely open. Sometimes I take the devils
position, just to see how it plays...

--
Steve/n5owk

21. Re: [NETSIG:2198] Re: TNC-based compression

From: vodall@mtewe.proulx.com (loopy)
Date: Mon, 06 Nov 95 10:29:44 MST
To: netsig@tapr.org
Message-ID: <0Zk6DD1w165w@mtewe.proulx.com>
Rendered body type: text/plain

"Karl F. Larsen" <k5di@acca.nmsu.edu> writes:

> For example the thought that a 1200 baud packet
> network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
> example. Consider 2 1200 baud guys working each other. The data flows at
> less than 600 baud for many reasons. They include but are not limited to:
> TXD, ACK packets, Collisions, poor setup.
>
>   Now consider a 4 node network. 300 baud? Not really. More like 100
> baud when all the factors above are considered. Of course this assumes that
> the network is made up of single frequency nodes; 1 radio, 1 tnc. Why assume
> this? Because 90+ % of all packet nodes are of this type!

Excellent points! I'd even say a bit optimistic. A mesh (mess?) network with
hidden transmitters is usually good for around 5 c.p.s. (50 baud) or less.

>   So what can you expect from compression? I use it over that 4 node
> network above, only it's 2 nodes at 1200 baud and 3 nodes at 9600 baud and
> then a 1200 baud digipeat through a tcp/ip station at 1200 baud. How does it
> work? Just GREAT! It is not real fast but wb7tls and I do connect Arizona to
> NM that way. And it works well. We have done it with the old style of
> forwarding and when we both went FBB it was a shock to see how much faster
> data flowed!

One little point here. FBB forwarding benefits from both compression and
a pipelined data stream. The pipelining of the data packets over the
network can be as big a gain as the compression.

>   So please don't dampen the idea of using compression just because
> the path is poor. 200 baud is TWICE as fast as 100 baud EVERY TIME!

Not completely true. The bits flow twice as fast but not the data. At least
not in the AX25 world.

Assuming:

1. a 300 ms TXDELAY.

2. 40 bytes of AX25 header overhead. (Is it 40 or 30?)

3. 10 bytes at 1200 baud take 100 ms...

Then a typical AX25 data packet will take 300 + 400 + 2500 ms or roughly

3.2 seconds. With 50 percent compression on the data portion that changes
the timing to 300 + 400 + 1250 or 1.95 seconds for the same 256 bytes
of data. Going from 3 to 2 seconds for the packet is a 33% improvement.
That's assuming 50% compression which is not going to be seen very
often, if at all. Twenty to thirty percent would probably be more
realistic.

The impression I'm getting from all the discussion is that adding general
end-to-end compression is complicated and won't yield that big of an
improvement. I.E. the ROI isn't that great.

I believe there are other areas were we would get more "ROI".

  1. Convincing folks that removing even one busy hidden transmitter from
      a network can give a big improvement.

  2. Adding some sort of DAMA protocol.

  3. Compression along with redesigning the AX25 header for the lowest
      level AX25 links of a network. This is opposed to the end to end
      configuration being discussed. IE. for a network:

          A - B - C - D

      If the connection from B to C were transparently "compressed" using
      a new, more efficient protocol, then all network traffic would benefit.

  4. Multicasting.

> Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

I'm visiting in Fort Collins for a few days and have a toll-free Email
connection. This sure beats the home setup of a single, daily, early-morning
long distance call for mail.

73 - Bill, WA7NWP   vodall@bigsky.dillon.mt.us

22. Re: [NETSIG:2198] Re: TNC-based compression

From: ferracci@imaginet.fr (Laurent Ferracci - F1JKJ)
Date: Tue, 07 Nov 1995 05:40:50 GMT
To: netsig@tapr.org
Message-ID: <199511070540.GAA12233@icaria.imaginet.fr>
Rendered body type: text/plain

On Mon, 6 Nov 1995 08:22:12 -0600, you wrote:

>   Seems like everyone commenting on this idea has little or no
>experiance with REAL nodes. For example the thought that a 1200 baud packet
>network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
>example. Consider 2 1200 baud guys working each other. The data flows at
>less than 600 baud for many reasons. They include but are not limited to:
>TXD, ACK packets, Collisions, poor setup.

???

Seems like Karl F. Larsen has little or no experience with what a BAUD
is :-))

The BAUD value measures the number of times the tone will change in
one second. 1200 BAUDS means that the tone changes 1200 times/second.

BAUD has nothing to do with the real throughput. I'm affraid BPS and
BAUD (even if oftently mistaken) have nothing to do with each other...

1200 Baud packet will always run at 1200 Bauds, 4 nodes or not !!

BPS can measure the throughput of a channel.
Maybe did you want to explain us what BPS was ?

-- +------------------------------+----------------------------+
-- | From Laurent FERRACCI, F1JKJ | > ferracci@imaginet.fr < |
-- | Montpellier, FRANCE | F1JKJ @F1RVP.FMLR.FRA.EU |
-- +------------------------------+----------------------------+
--
-- [PGP key on public-key servers]

23. RE: [NETSIG:2198] Re: TNC-based compression

From: Ron Curry <recurry@insighttec.com>
Date: Mon, 6 Nov 1995 22:15:34 -0800
To: "netsig@tapr.org" <netsig@tapr.org>
Message-ID: <01BAAC95.65447600@yankee.insighttec.com>
Rendered body type: text/plain

Karl,
What software are you using and is your compression software publicly available?

Ron

From: Karl F. Larsen[SMTP:k5di@acca.nmsu.edu]
Sent: Monday, November 06, 1995 6:21 AM
To: netsig@tapr.org
Subject: [NETSIG:2198] Re: TNC-based compression

        Seems like everyone commenting on this idea has little or no
experiance with REAL nodes. For example the thought that a 1200 baud packet
network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
example. Consider 2 1200 baud guys working each other. The data flows at
less than 600 baud for many reasons. They include but are not limited to:
TXD, ACK packets, Collisions, poor setup.

        Now consider a 4 node network. 300 baud? Not really. More like 100
baud when all the factors above are considered. Of course this assumes that
the network is made up of single frequency nodes; 1 radio, 1 tnc. Why assume
this? Because 90+ % of all packet nodes are of this type!

        So what can you expect from compression? I use it over that 4 node
network above, only it's 2 nodes at 1200 baud and 3 nodes at 9600 baud and
then a 1200 baud digipeat through a tcp/ip station at 1200 baud. How does it
work? Just GREAT! It is not real fast but wb7tls and I do connect Arizona to
NM that way. And it works well. We have done it with the old style of
forwarding and when we both went FBB it was a shock to see how much faster
data flowed!

        So please don't dampen the idea of using compression just because
the path is poor. 200 baud is TWICE as fast as 100 baud EVERY TIME!

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

24. Recent postings with flame content

From: NETSIG Moderator <netsig-m@tapr.org>
Date: Wed, 8 Nov 1995 09:25:05 -0600 (CST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951108090147.3887G-100000@sys1.tapr.org>
Rendered body type: text/plain

I was (properly) chastised this morning in private e-mail by a recent
contributor for rejecting his posting.

I explained to him that I walk a fine line as moderator, trying to keep
the worst of the flaming out, and the flaming in general to a minimum.
Like most of you, I'm sure, life for me is busy in general, and I feel an
obligation to approve or reject posts to NetSIG in a timely manner. This
means that sometimes I don't spend as much time as perhaps I should
reviewing each post for slurs, slanders, etc.

The alternative is for me to review NetSIG postings only when I feel I
have time to "ponder" them- which would happen perhaps once a week-
clearly unacceptable for the fast-moving content of this list.

So... sometimes the moderator screws up and approves posts that, if it
could be recalled, it would be. Some then take offense to an
inappropriate phrase or phrases and fire back a stinging rebuttal that's
more appropriate for private e-mail than this list. Knowing where to to
call a halt to the rebuttals is tricky at best- SOMEONE >WILL< be
offended, no matter what.

Allow me to restate: Sometimes, the Moderator DOES SCREW UP...

Please... remember that we're participants in this list to LEARN from
each other- not to provoke flames, or respond to them- this list is about
Amateur Radio Networking, not personalities.

Thanks again for your patience on this admittedly non-Networking topic.

Steve Stroh
Moderator, TAPR NetSIG Mailing List

strohs@halcyon.com

25. Re: Backbone Routing Protocol (BRP)

From: shawnpat@sierra.net
Date: Tue, 07 Nov 1995 18:55:47 -0800
To: netsig@tapr.org
Message-ID: <199511071857.AA10961@diamond.sierra.net>
Rendered body type: text/plain

>>I stand by my statement. Properly configured, AX25 can pump out IP highly
>>efficiently.

Steve/n5owk wrote:
>The problem is Brian, that the sentence doesn't mean anything.

In this case, Steve is correct, on the given that there has been no
real study of efficiency for ax25.
So to offer up a deffinition:
ax25 efficiency means, for what ever baud rate, the data being sent is
received by the device, acknowledged, and sent onto the next intended
receiver. First time every time, with lack of retries and due consideration
of exterior influences over which ax25 devices or device operators and
builders have no control.

<snip>

>The rest of your message was fairly defensive, so I will only state that it
>is only my intention to have a pleasant conversation with you all, and take
>a few liberties in humor, but I do not wish to appear religious on any radio
>issue, or data method. I'm completely open. Sometimes I take the devils
>position, just to see how it plays...

Which in the internet world translates to *sometimes I troll just to watch
the fireworks*.

Non-trolls will announce that they are taking an opposing view for the
benifit of the discussion, but will not make remarks that detract from
the discussion. If a question comes up, will ask the question straight
out, rather than making remarks about the person writing.
The words *you* or *your* usually indicates a remark about the person.

Now, my question is, what are the equipment advantages and parameters
that make ax25 work efficiently? NEDA has defigned some parameters,
as also have several other sources. I find that these different sources
do not agree. I think that is due to the differences in equipment,
environment and the perception of the purpose of the equipment.
Ie: is it intended for high volume traffic, high volume environment
(equipment wise), or a mixture of the two?

I have my favorite 1200 baud configuration of equipment and params that
seem to work very well here, but then I cannot convince the neighbors
of that.

So to start the ball, here is my equipment setup:
1200 baud simplex with neighbors.
GE master II
TX Audio inject to CG input
Rx audio on speaker pins
Receiver preamp sometimes used (GE type)
No control head, volume and squelch controlled by pots.
Tiny-2 TNC (some MK-2) with
Tapr DCD kit
10 Mhz upgrade (jumper on MK-2)
The Net X1J nodeware
Open squelch

Shawn, N7XBM.

26. Re: [NETSIG:2202] Re: TNC-based compression

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 7 Nov 1995 11:57:10 -0700
To: netsig@tapr.org
Message-ID: <199511071857.LAA17878@acca.nmsu.edu>
Rendered body type: text/plain

At 07:05 AM 11/7/95 -0600, you wrote:
>"Karl F. Larsen" <k5di@acca.nmsu.edu> writes:
>

>> For example the thought that a 1200 baud packet
>> network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
>> example. Consider 2 1200 baud guys working each other. The data flows at
>> less than 600 baud for many reasons. They include but are not limited to:
>> TXD, ACK packets, Collisions, poor setup.
>>
>>   Now consider a 4 node network. 300 baud? Not really. More like 100
>> baud when all the factors above are considered. Of course this assumes that
>> the network is made up of single frequency nodes; 1 radio, 1 tnc. Why assume
>> this? Because 90+ % of all packet nodes are of this type!
>
>Excellent points! I'd even say a bit optimistic. A mesh (mess?) network with
>hidden transmitters is usually good for around 5 c.p.s. (50 baud) or less.
>
>>   So what can you expect from compression? I use it over that 4 node
>> network above, only it's 2 nodes at 1200 baud and 3 nodes at 9600 baud and
>> then a 1200 baud digipeat through a tcp/ip station at 1200 baud. How does it
>> work? Just GREAT! It is not real fast but wb7tls and I do connect Arizona to
>> NM that way. And it works well. We have done it with the old style of
>> forwarding and when we both went FBB it was a shock to see how much faster
>> data flowed!
>
>One little point here. FBB forwarding benefits from both compression and
>a pipelined data stream.   The pipelining of the data packets over the
>network can be as big a gain as the compression.
>
>>   So please don't dampen the idea of using compression just because
>> the path is poor. 200 baud is TWICE as fast as 100 baud EVERY TIME!
>
>Not completely true. The bits flow twice as fast but not the data. At least
>not in the AX25 world.
>
>Assuming:
>
> 1. a 300 ms TXDELAY.
>
> 2. 40 bytes of AX25 header overhead. (Is it 40 or 30?)
>
> 3. 10 bytes at 1200 baud take 100 ms...
>
>Then a typical AX25 data packet will take 300 + 400 + 2500 ms or roughly
>3.2 seconds. With 50 percent compression on the data portion that changes
>the timing to 300 + 400 + 1250 or 1.95 seconds for the same 256 bytes
>of data. Going from 3 to 2 seconds for the packet is a 33% improvement.
>That's assuming 50% compression which is not going to be seen very
>often, if at all. Twenty to thirty percent would probably be more
>realistic.
>
>The impression I'm getting from all the discussion is that adding general
>end-to-end compression is complicated and won't yield that big of an
>improvement. I.E. the ROI isn't that great.

        What is a ROI?

>
>I believe there are other areas were we would get more "ROI".
>
> 1. Convincing folks that removing even one busy hidden transmitter from
>   a network can give a big improvement.
>
> 2. Adding some sort of DAMA protocol.

           What is DAMA?

>
> 3. Compression along with redesigning the AX25 header for the lowest
>   level AX25 links of a network. This is opposed to the end to end
>   configuration being discussed. IE. for a network:
>
>   A - B - C - D
>
>   If the connection from B to C were transparently "compressed" using
>   a new, more efficient protocol, then all network traffic would benefit.
>
> 4. Multicasting.
>
>> Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->
>

>I'm visiting in Fort Collins for a few days and have a toll-free Email
>connection. This sure beats the home setup of a single, daily, early-morning
>long distance call for mail.
>
>73 - Bill, WA7NWP   vodall@bigsky.dillon.mt.us

Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

27. Re: [NETSIG:2203] Re: TNC-based compression

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 7 Nov 1995 11:57:24 -0700
To: netsig@tapr.org
Message-ID: <199511071857.LAA17886@acca.nmsu.edu>
Rendered body type: text/plain

At 07:07 AM 11/7/95 -0600, you wrote:
>On Mon, 6 Nov 1995 08:22:12 -0600, you wrote:
>
>>   Seems like everyone commenting on this idea has little or no
>>experiance with REAL nodes. For example the thought that a 1200 baud packet
>>network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
>>example. Consider 2 1200 baud guys working each other. The data flows at
>>less than 600 baud for many reasons. They include but are not limited to:
>>TXD, ACK packets, Collisions, poor setup.
>
>???
>
>Seems like Karl F. Larsen has little or no experience with what a BAUD
>is :-))

        Alas I know what a baud is, but baud is mis-used here to mean
Bytes/second and many have no idea what a byte/second is. And in fact people
like to show there experts and use bits/second and bytes/second both as b/s.
This makes it very hard to understand.

>
>The BAUD value measures the number of times the tone will change in
>one second. 1200 BAUDS means that the tone changes 1200 times/second.

        Correct. That is exactly what it means.

>
>BAUD has nothing to do with the real throughput. I'm affraid BPS and
>BAUD (even if oftently mistaken) have nothing to do with each other...
>

        Exactly but hams don't know this, or many don't.

>1200 Baud packet will always run at 1200 Bauds, 4 nodes or not !!
>
>BPS can measure the throughput of a channel.
>Maybe did you want to explain us what BPS was ?

        Well My GUESS is what you call BPS is Bits/second. But you didn't
define the term so I and the other readers have no way of knowing what the
BPS is.

        Do YOU know Laurent? I expect your english is a second language. I'm
sorry for you because English is a hard language to learn.

>
>
>-- +------------------------------+---------------------------+
>-- | From Laurent FERRACCI, F1JKJ | > ferracci@imaginet.fr < |
>-- | Montpellier, FRANCE | F1JKJ @F1RVP.FMLR.FRA.EU |
>-- +------------------------------+---------------------------+
>--
>-- [PGP key on public-key servers]
>
>
Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

28. Re: [NETSIG:2204] Re: TNC-based compression

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Tue, 7 Nov 1995 11:57:30 -0700
To: netsig@tapr.org
Message-ID: <199511071857.LAA17891@acca.nmsu.edu>
Rendered body type: text/plain

At 07:09 AM 11/7/95 -0600, you wrote:
>Karl,
>What software are you using and is your compression software publicly
available?
>
>Ron
>

Hi Ron, the software comes with the F6FBB Packet BBS software beginning with version 5.14 but best used in 5.15. It is a public use compression method which I used to know but have forgot again. It has reciently been used with the JNOS software and the MSYS Packet BBS software now uses it. All 3 of these software can talk to each other with this compression, but not sure all three are using the same.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

29. Re: [NETSIG:2191] NETSIG digest 348

From: <MITCHELL.T@ocf.compuserve.com>
Date: 07 Nov 95 14:11:19 EST
To: <netsig@tapr.org>
Message-ID: <OCF_3470-28221@CompuServe.COM>
Rendered body type: text/plain

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 11/7/95 12:43PM
To: INTERNET:netsig@tapr.org 01:46 EST 03-Nov-95 at OCF_INFORM
Subject: Re: [NETSIG:2191] NETSIG digest 348
Contents:

Text item: Text_1

>>What we really need is a a complete re-design of the amatuer packet
system.
>>>The reality is we need plug n' play high speed and with better
>protocols.
>>>Significant performance could be gained with the following changes:
>
>I suggest a cellular scheme. Any comments?
>
>If each area had 7 frequencies assigned to digital you could build a
>hexagonal cellular system that could allow users to connece reliable
>with
>only a few watts (which makes for nice cheap radios :-). Connect the
>cells
>with high speed backbones in the 128kb/s-2Mb/s range and then connect
>city
>cell systems together with something like the token-passing system I
>mentioned in a previous post. A hierarchial system is the way to go.
>
>   -Bill kb8wyp

Just to let the NETSIG group know, we are doing exactly what was being described about a CELLULAR network in the metro area here in Kansas City! The system is sponsored by the Kansas City Packet Group (KCPG), while the nodes are individually owned. The KCPG sets policy on how to interface and operate the system, parameters and such.

Granted, we are not running 128kb/s between CELL SITES. Currently, we have 6, X1J2/X1J4 nodes operating on 144.97, 145.01, .03, .05. ,07, and .09 MHz here in Kansas City. To help the users out we call the nodes MCI97, MCI01, MCI03, and so on...

These nodes are all linked on 223.40 MHz at 2400 baud. On 223.40 we have a Gracilis packet switch which takes the 2400 baud packets, and routes it to three 9600 baud port. Our 96EAST port is linked to Columbia, and St. Louis, MO on the MoAmPS 441.05 MHz link. The 96WEST port connects Lawrence and Topeka, KS on 439.95 MHz. Finally, the INTERNET port connects the network to our internet provider on 446.20 MHz at 9600 baud (we are still working on this!).

For those that are keeping score, that leaves one extra port on the Gracilis and that port is used to connect our TCP/IP network on 145.63 MHz, 1200 baud, to the rest of the world. This may be changed to help back-up the network in the future, or allow a connection into our 9600 baud, UHF regen repeater.

I have been very please with the thruput and effectiveness of this network configuration. I have found that most of the network traffic is on the main 2M node user channels. The traffic is normally USER to USER, or USER to BBS, its approximately 80% of the time. There is some crossover taking place but at a lower level, about 20% of the time. This traffic is normally USER to DX CLUSTER, which is available through 223.40 MHz. I hope that as our high speed links becomes more reliable that the user activity will increase.

Currently, the high speed links are used for BBS forwarding, mainly. Maybe some TCP/IP traffic in the near future. Our largest problem is not hardware or software related, it is user understanding and education!

If you have any question about the KCPG Network, please send me a message and I will be glad to answer any questions, or if you have some ideas on how to improve the system, I am all ears! Soon, I will try to find a place where a Home Page can house the network topogragphy for easier understand on the Web, any suggestions?

Thanks,

Tim Mitchell, KA5RYF

30. The Telecoms Revolution

From: rwhiting@winternet.com (Rick Whiting)
Date: Tue, 7 Nov 1995 17:35:02 -0600
To: ptownson@massis.lcs.mit.edu, netsig@tapr.org
Cc: Harry.D.Hurley@CDEV.com
Message-ID: <199511072335.RAA15658@icicle>
Rendered body type: text/plain

There is some good reading on the future of telecommunications in the following peridicals:

The Economist, Vol. 336, No. 7934 (Sept. 30, 1995):
"The Revolution Begins, At Last," pp. 15-16, and especially,
"Telecommunications, The Death of Distance," pp. SURVEY 1-28.

National Geographic, Vol. 188, No. 4 (October 1995):
"Information Revolution," pp. 5-37.

I thought I'd mention it because these aren't the periodicals in which one expects to find good telecommunications-related articles.

Richard A. (Rick) Whiting	Phone: + 1 612 550 1213
5780 Rosewood Ln. N.	E-mail: rwhiting@winternet.com
Plymouth, MN 55442-1411	Packet: W0TN @ WB0GDB.MN.USA.NOAM
U.S.A.	Fax: Number on request

31. Re: [NETSIG:2199] Re: Backbone Routing Protocol (BRP)

From: ssampson@icon.net (Steve Sampson)
Date: Tue, 7 Nov 1995 20:13:31 -0600
To: netsig@tapr.org
Message-ID: <199511080213.UAA02769@ns2.icon.net>
Rendered body type: text/plain

I previously stated:

> I think if TNC programmers want a project that will improve packet
> overnight, Error # 1 (pipeline) is the one to tackle.

I was looking for a simple example to highlight what I thought was a shortcoming of the protocol. The choice turns out to be very poor, as AX.25 does pipeline as noted by the several pointed private replies I received. I would like to say that those who replied privately have done more to educate me than the public contributions released so far.

I shall endeavor to avoid any mention of protocols. Kick me if I fail.

Thanks,

--
Steve/n5owk

32. Re: [NETSIG:2203] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Tue, 7 Nov 1995 19:32:53 -0600
To: netsig@tapr.org
Message-ID: <199511080132.TAA14172@mercury.texoma.com>
Rendered body type: text/plain

>
>BAUD has nothing to do with the real throughput. I'm affraid BPS and
>BAUD (even if oftently mistaken) have nothing to do with each other...
>
>1200 Baud packet will always run at 1200 Bauds, 4 nodes or not !!
>
>BPS can measure the throughput of a channel.
>Maybe did you want to explain us what BPS was ?
>

I believe the point of compressing text data for packet is this: If a given block of text's CHARACTER COUNT can be reduced 30-70% (As it can) by compression, then you end up with 30-70% less characters to transmit to the distant station in order to get the job done. It is a way we can use the processing power of our TNC to reduce the load on our radios, and also effect a reduction of the packet network's load.

Whatever the propagation conditions, baud rate, ect... Any time you have to transmit less characters, you're getting things done faster and more reliably. While doing so, you're also cutting down on the amount of time your station is on the air, which obviously is great for EVERYBODY.

One rule of thumb is that while compression of text is of benefit at ALL TIMES, it becomes MORE efficient as you are able to use greater PACLEN settings, cutting down on overhead a bit. In circumstances where higher PACLENS are practical, thier normal benefit is MULTIPLIED when used to transmit compressed text (as opposed to normal, uncompressed text).

The GREAT majority of data moved over packet is plain text. Not all of it of course, but most of it. The exceptions to this rule such as 7PLUS and R95 files are already compressed and won't be affected much by further compression, if at all.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

All art tends to the condition of MUSAK.

33. Re: [NETSIG:2202] Re: TNC-based compression

From: rdonnell@eskimo.com (Robert Donnell)
Date: Tue, 07 Nov 1995 23:44:49 -0800
To: netsig@tapr.org
Message-ID: <199511080742.XAA15076@mail.eskimo.com>
Rendered body type: text/plain

>Not completely true. The bits flow twice as fast but not the data. At least
>not in the AX25 world.
>
>Assuming:
>
> 1. a 300 ms TXDELAY.

A good assumpution, tho a friend and I were able to reduce TXDELAY to about 40 milliseconds with fast radios - as a point of information.

>
> 2. 40 bytes of AX25 header overhead. (Is it 40 or 30?)
>

```
    1 flag byte
   14 bytes total for a direct connect - 7 per callsign
    1 control flag
    1 PID flag (I frames only)
      ---- data goes here ----
    2 frame check bytes ( CRC )
    1 flag byte
   ___
   20 bytes of direct overhead.
```

Other areas of overhead occur if bit stuffing is needed to prevent HDLC
control bit patterns (like flags) from occuring in the data stream.

> 3. 10 bytes at 1200 baud take 100 ms...

Since HDLC is a syncronous protocol, the start and stop bits that are part
of the asyncronous are not transmitted on the air as part of the packet. So
it really normally takes just under 66 mS to send 10 bytes or 80 bits. This
is why even compressed files are sent at rates in excess of 1600 bytes per
second on 14,400 bps modems - the start and stop bits are not transmitted.
Phone modems and the packet HDLC protocol strip out the 20% overhead of
start and stop bits, and use other signalling techniques to syncronize the
data stream.

>
>Then a typical AX25 data packet will take 300 + 400 + 2500 ms or roughly
>3.2 seconds. With 50 percent compression on the data portion that changes
>the timing to 300 + 400 + 1250 or 1.95 seconds for the same 256 bytes
>of data. Going from 3 to 2 seconds for the packet is a 33% improvement.
>That's assuming 50% compression which is not going to be seen very
>often, if at all. Twenty to thirty percent would probably be more
>realistic.

256 bytes data + 20 bytes overhead = 276 bytes = 2208 bits
2208 bits / 1200 bps = 1840 mS

So - more correctly - 300 + 1840 = 2140 mS

Of course, normally only BBS's and those performing file transfers will
generate 256 bytes (or more (much more!)) of data at once. Since most file
transfers are already compressed, there will be no gain, so you can discount
those. Assuming the BBS is sending an uncompressed data stream to the TNC,
there's no reason for the TNC to send a packet that is smaller than what
ever the packet length is set for, so the end result is that fewer packets
of the same size will be sent - not shorter packets.

> 1. Convincing folks that removing even one busy hidden transmitter from
>   a network can give a big improvement.
>

Always! One of the reasons we have so many packet repeaters hereabouts.

> 2. Adding some sort of DAMA protocol.

Another reasonable alternative, tho it requires that the master be
absolutely dependable. Also, will not receive wide support in the U.S.
until major manufacturers support it or make source code for TNCs available
so others can add the capability.

>
> 3. Compression along with redesigning the AX25 header for the lowest
>   level AX25 links of a network. This is opposed to the end to end
>   configuration being discussed. IE. for a network:
>
>   A - B - C - D
>
>   If the connection from B to C were transparently "compressed" using
>   a new, more efficient protocol, then all network traffic would benefit.
>

On a per-packet basis, about the only way to reduce overhead is to shrink
the addressing. At one time AEA offered a scheme for doing this, which was
primarily designed to reduce protocol overhead on HF, which has an even
worse hidden transmitter problem!

On the other hand, a way to enhance the protocol has been partially
implemented in some versions of NOS. Effectively 'streaming' was
implemented, whereby if one packet fram in a sequence was missing (discarded
due to an error) the following frames would be retained. Although the
sender will normally still retransmit the following frames, if the receiver
kept the other good frames, if one of the following frames is damaged in the
retry process, the good frame that the receiver still has will allow the
receiver to acknoledge the entire sequence, moving the window to the next frame.

What should be a reasonably simple way to modify the protocol to address
this issue is to cause the standard action to a retry situation to be that
the sender sends a single data frame, i.e. the first unacknowledged frame in

the window. If the receiver gets the retry OK, then it can acknowledge that
frame only (for unmodified TNCs) or it can acknowledge that frame plus all
the following ones in sequence which it has received correctly. If a second
frame in a sequence was also damaged, the acknowledgement would be for all
frames up to (but not including) that one one. Since the sender knows how
many frames it transmitted, if the acknowledgement does not include all
transmitted frames, the sender will know to send only the next missing frame.

I've not thought this through fully, but an extension here could be for the
sender to also add any additional frames available to fill out the window.
The hazard is that if the old and new windows overlap, the receiver could
confuse new data for data transmitted in the previous window.

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
---

34. Re: [NETSIG:2197] Re: Backbone Routing Protocol (BRP)

From: rdonnell@eskimo.com (Robert Donnell)
Date: Wed, 08 Nov 1995 00:51:19 -0800
To: netsig@tapr.org
Message-ID: <199511080849.AAA27177@mail.eskimo.com>
Rendered body type: text/plain

>OK I'll bite:
>
>1. AX.25 can't pipeline.
>
>   There appears to be a maxframe design that can pipeline up to
>seven frames. The design is broken, as any of the seven frames
>having an error will cause all frames to be resent.
>

Of course, using UI frames allows TCP to do its own retries and pipelining -
and it works pretty well for most of us in this neck of the woods...

>2 Through 50 upon request.
>
>I think if TNC programmers want a project that will improve packet
>overnight, Error # 1 is the one to tackle. It's like a pipe and a
>marble. AX.25 is like putting one marble in the pipe and waiting
>for it to roll down to the other end. Real pipeline is like a pipe
>full of marbles, such that pushing one in causes one to fall out
>at the other end.
>

... Stolen from one of my other postings tonight ...

On the other hand, a way to enhance the protocol has been partially
implemented in some versions of NOS. Effectively 'streaming' was
implemented, whereby if one packet frame in a sequence was missing
(discarded due to an error) the following frames would be retained.
Although the sender will normally still retransmit the following frames, if
the receiver kept the other good frames, if one of the following frames is
damaged in the retry process, the good frame that the receiver still has
will allow the receiver to acknoledge the entire sequence, moving the window
to the next frame.

What should be a reasonably simple way to modify the protocol to address
this issue is to cause the standard action to a retry situation to be that
the sender sends a single data frame, i.e. the first unacknowledged frame in
the window. If the receiver gets the retry OK, then it can acknowledge that
frame only (for unmodified TNCs) or it can acknowledge that frame plus all
the following ones in sequence which it has received correctly. If a second
frame in a sequence was also damaged, the acknowledgement would be for all
frames up to (but not including) that one one. Since the sender knows how
many frames it transmitted, if the acknowledgement does not include all
transmitted frames, the sender will know to send only the next missing frame.

I've not thought this through fully, but an extension here could be for the
sender to also add any additional frames available to fill out the window.
The hazard is that if the old and new windows overlap, the receiver could
confuse new data for data transmitted in the previous window.

... end of theft ...

73, Bob

```
------------------------------------------------------------------------
  Bob Donnell, KD7NM       bob@kd7nm.ampr.org    rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
------------------------------------------------------------------------
```

35. Re: [NETSIG:2189] Re: equipment

From: rdonnell@eskimo.com (Robert Donnell)
Date: Wed, 08 Nov 1995 01:15:45 -0800
To: netsig@tapr.org
Message-ID: <199511080913.BAA01730@mail.eskimo.com>
Rendered body type: text/plain

>I suggest a cellular scheme. Any comments?
>
>If each area had 7 frequencies assigned to digital you could build a
>hexagonal cellular system that could allow users to connece realiably with
>only a few watts (which makes for nice cheap radios :-).

It's nice if you can make it work. It requires a few things that those of us in hilly areas have trouble with - most notable is that many hams choose to live on hilltops. This makes it real tough to control cell size. Couple this with the absolute requirement that all users cooperate to control antenna patterns and signal levels and you have something that the average ham won't be able to acomplish, even if he's willing to.

Not that we've suceeded yet, but it's one of the reasons that in this area we have several 440 MHz 'low-level' 9600 baud packet repeaters. They encourage the use of beams, and virtually eliminate collisions. We also look forward to re-using the frequencies, which should be possible, especially since user station operators are requested to use beams. This helps reduce the chances that a user station will 'illuminate' more than one repeater.

Connect the cells
>with high speed backbones in the 128kb/s-2Mb/s range and then connect city
>cell systems together with something like the token-passing system I
>mentioned in a previous post. A hierarchial system is the way to go.
>

One of the other things that can help reduce the dependence on local backbones is that a reasonably well situated user station can set up multi-port stations that tie together different cells. This also has the benifit of giving users a piece of the action, by allowing them to provide redundancy in the network. Since we seem to be more likely to buy stuff for our own stations than to donate to a 'nebulous' or 'invisible' backbone project, this has worked pretty well locally.

This strategy might also help out the long-haul backbones - in that what monies can be collected can be focused on the long-haul circuits, rather than being divided into funding both an in-city backbone and a long-haul circuit.

Food for thought???

73, Bob

```
------------------------------------------------------------------------
  Bob Donnell, KD7NM       bob@kd7nm.ampr.org    rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
------------------------------------------------------------------------
```

36. No longer a part....

From: "Brian A. Lantz" <brian@lantz.com>
Date: Wed, 8 Nov 1995 12:02:01 -0500 (EST)
To: TAPR NETSIG Mailing List <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.951108115448.28913D-100000@lantz.com>
Rendered body type: text/plain

I doubt that this makes it throught the censorship being done to the SIG, but I will try anyway....

Publicly my statements have been ridiculed, questioned, and called 'Hogwash'. They have been said to "Never Happen". When trying to respond to this in a message that was NOT a flame, but a defense, it was chosen to censor this message, and not allow it on the list. This was said to be because of the use of a common word, that describes someone who is not truthful.

Since when someone makes a contribution to the list, and is attacked, and

they are NOT allowed to defend themselves, I believe that I have better
uses of my time, then contributing to NETSIG.

Flames someone, it gets through. Defend yourself, it gets rejected and
censored. TAPR needs to SERIOUSLY consider if this is a valid use of it's
time and resources.

73.....

Brian A. Lantz   http://www.lantz.com   brian@lantz.com

REAL PORTION of Microsoft Windows code:
```
        while (memory_available)        {
                eat_major_portion_of_memory (no_real_reason);
                if (feel_like_it)
                        make_user_THINK (this_is_an_OS);
                gates_bank_balance++;
        }
```

37. Re: [NETSIG:2211] The Telecoms Revolution

From: Chuck Hast <wchast@tma1.noname>
Date: Wed, 8 Nov 1995 17:23:25 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9511081707.G5887-0100000@tma1.noname>
Rendered body type: text/plain

I have not seen the National Geo. one but I have The Economist at home and
have really read that one through, as usual The Economist did a very good
job on the whole subject and also pointed out a lot sore points (mostly
someone's bill fold taking a hit) that are along the path.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

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Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

38. Re: [NETSIG:2207] Re: TNC-based compression

From: vodall@mtewe.proulx.com (loopy)
Date: Wed, 08 Nov 95 17:38:44 MST
To: netsig@tapr.org
Message-ID: <07T0DD1w165w@mtewe.proulx.com>
Rendered body type: text/plain

"Karl F. Larsen" <k5di@acca.nmsu.edu> writes:

> >The impression I'm getting from all the discussion is that adding general
> >end-to-end compression is complicated and won't yield that big of an
> >improvement. I.E. the ROI isn't that great.
>
>   What is a ROI?
>
> >
> >I believe there are other areas were we would get more "ROI".

Return On Investment....   How much improvement do we get for the
effort extended.

> > 2. Adding some sort of DAMA protocol.
>
>
>   What is DAMA?

I'm not sure exactly what the appreviation stands for. Essentially it's

the German (?) protocol with a master/slave approach for sending data
from the users to a node. It greatly reduces the collisions from hidden
transmitters which is the bane of most of our existing networks.

  D? A? Multiple Access...

> Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

Bill

39. Re: [NETSIG:2210] Re: NETSIG digest 348

From: Chuck Hast <wchast@tma1.noname>
Date: Wed, 8 Nov 1995 17:44:13 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9511081756.H5887-0100000@tma1.noname>
Rendered body type: text/plain

I was recently in your city Tim. I was using the node that was in down town
KC. I found that I could connect with no problems from the hotel I was in,
and poked around your network a bit.

Here is one thing which I have found seems to be common to many packet
networks; that is a common INFO interface so to speak.

If you hit a area and want to get info on the network, how do you do so.
In some cases I have had a ham call me and give me info, in others I have
been able to pick bits and pieces of info up here and there. But in the
great majority of the areas I have flown into, I find a ready and commonly
known INFO source is hard to come by.

One common observation I have been told is to "connect to the local node
and get a nodes list" well in all truth that does not tell me much,
unless I have some sort of map, I do not know what most of those calls
and aliases are on those list.

Here is a idea that in some way you might apply to other network types:

Most ROSE networks have some sort of INFO source at a ROSE address of
nnn411 and 555, so as a example if someone is in the Tampa Bay area, all
the do is connect to INFO at 813411 or 813555, and they will get, in the
case of the Tampa Bay area, a menu of information, you select from the
menu the information you want and it start shipping you the screens of data.

By the same token, I can issue a connect to info @ 214411 or 214555 and
get info back from the Dallas area, or I can go for the 817411 or 817555 INFo
and get data back on that area north and west of Dallas.

Same holds for other ROSE networks across the country. I do not know how
you would implement this concept on NetRom but I am sure there is a way.

TNOS should make it very easy to do wherever there is a TNOS box running.

All you need is some common form of interface, in the ROSE network case
it is very easy to rememember, all of them being based on the 411 and 555
addresses, and the target is always INFO.

By way the INFO server running in Tampa is a PC based ROSE switch, which
has the INFO server from TNOS running in it.

We also have used TNOS with a dedicated 411 or 555 address as a info server.

Using TNOS as the INFO server should make things easier, you just need
some form of common interface that is used all across the type of
networks being used in the amateur radio world.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:Costa Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

40. Re: [NETSIG:2199] Re: Backbone Routing Protocol (BRP)

From: "Mitch, WA4OSR" <fmitch@maf.mobile.al.us>
Date: Wed, 8 Nov 1995 20:53:41 -0600 (CST)
To: netsig@tapr.org
Message-ID: <Pine.SOL.3.91.951108204935.19190A-100000@ns1>
Rendered body type: text/plain

i have one of the tapr 9600 baud modems installed in an aea pk-80 tnc2
clone... i haven't been able to get the modem to properly work...

i would like to sell the tnc with the 9600 baud modem installed... i am
asking $70 plus $5 ups for a total of $75... if interested, please call
or email me...

mitch
wa4osr

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 Email: fmitch@maf.mobile.al.us   Felton "Mitch" Mitchell, WA4OSR
 The Vibroplex Co., Inc.
 11 Midtown Park, E.
 Mobile, AL 36606-4141 USA
 334-478-8873 Vibroplex, 334-342-7259 home, 334-476-0465 FAX

---

41. 9600 BPS Repeater.

From: Dino Darling <dinod@deltanet.com>
Date: Wed, 08 Nov 1995 20:21:19 -0800
To: netsig@tapr.org
Message-ID: <9511090421.AA06103@server1.deltanet.com>
Rendered body type: text/plain

It is time for a 9600 BPS repeater here in Southern CA! My plan is to
purchase TWO Motorola Mitreks and the TAPR modem w/ clock and bit regen
kits. What else do I need? How do I get the thing to ID every 9.5 minutes.
Who has done this and can give me some technical advise. I will say that we
are planning on using 2 Mitreks for this reason...

1. Better isolation.
2. If the transmitter or the receiver goes out in any of the radios, we can
just switch them! (Pretty smart huh!)

Any advise would be helpful. We are building a 386 rackmount computer and a
DRSI type card for a TCP/IP router. This will be added later. Right now, I
need a stand-alone repeater. 73!

Dino

42. Moderator's response to Brian's recent post

From: NETSIG Moderator <netsig-m@tapr.org>
Date: Thu, 9 Nov 1995 01:53:47 -0600 (CST)
To: "TAPR Networking Special Interest Group (NETSIG)" <netsig@tapr.org>
Message-ID: <Pine.LNX.3.91.951109014134.7055H-100000@sys1.tapr.org>
Rendered body type: text/plain

I rejected a post of Brian's earlier today. Brian felt strongly that it
was only fair that he be allowed to rebut some statements made previously
to the list. Brian "cleaned up" the posting, and in fairness, I approved it.

I sincerely hope that Brian's posting ends this round of "he said, and
then HE said, and then HE said that I said..." ad nauseum.

Please make any additional comments on this topic in private e-mail, NOT
to the list.

Steve Stroh N8GNJ
NetSIG Moderator
strohs@halcyon.com

43. Re: [NETSIG:2219] Re: TNC-based compression

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)
Date: Thu, 09 Nov 95 07:00:43 UTC
To: netsig@tapr.org
Message-ID: <9765@paccomm.com>
Rendered body type: text/plain

DAMA means Demand Assigned Multiple Access if I remember correctly. Not an amateur innovation - derived from commercial communication satellite use.

_ _
Gwyn Reedy, W1BEL   gwyn@paccomm.com   W1BEL@amsat.org

PacComm Packet Radio Systems, Inc.   +(813) 874-2980 Fax:+(813) 872-8696
4413 N. Hesperides St.   BBS: +(813) 874-3078 (V.34)
Tampa, FL 33614-7618 USA   info@paccomm.com http://www.paccomm.com/info

44. Re: [NETSIG:2214] Re: TNC-based compression

From: n5pvl@texoma.com (Charles Brabham)
Date: Thu, 9 Nov 1995 09:38:33 -0600
To: netsig@tapr.org
Message-ID: <199511091538.JAA00202@mercury.texoma.com>
Rendered body type: text/plain

>
>Of course, normally only BBS's and those performing file transfers will
>generate 256 bytes (or more (much more!)) of data at once. Since most file
>transfers are already compressed, there will be no gain, so you can discount
>those. Assuming the BBS is sending an uncompressed data stream to the TNC,
>there's no reason for the TNC to send a packet that is smaller than what
>ever the packet length is set for, so the end result is that fewer packets
>of the same size will be sent - not shorter packets.
>

I'd like to mention here that most User connections to a BBS result in several requests for data which are far in excess of 256 bytes. Listing messages can go on quite a bit, and bulletins sized at 5-8k are not unusual at all. With busy BBS stations an awful lot of info is moved as hams list and read messages, bulletins and so on during the course of the day. Compressed TNC's would be a great help in speeding these things up, and reducing the network's load.

It's true that fewer packets of the same size are sent. By requiring less packets to send the same amount of info, compression eliminates the overhead represented by those unsent packets. This must be considered when trying to evaluate the effect of a compression scheme, in addition to the reduction in the number of characters which must be sent to move the data itself. Remember that busy freqs with hidden transmitters and so on generate a lot of retries. If you need to send less packets, you'll also generate less retries.

In general, all networks would benefit from a lesser number of packets being sent over them. When attempting to communicate over a poor or busy path, having to send less packets would again be a great help. Under conditions which demand lower PACLEN settings (generating more numerous, smaller packets) the compression again allows you to send fewer packets. In this case, the gain from reduced overhead is much more significant.

>On a per-packet basis, about the only way to reduce overhead is to shrink
>the addressing. At one time AEA offered a scheme for doing this, which was
>primarily designed to reduce protocol overhead on HF, which has an even
>worse hidden transmitter problem!

Reducing the overhead per-packet is a worthwhile goal, and should compliment compression's reduced overhead from the lesser number of packets transmitted. Of the two, compression is the easiest one to do and offers the highest overall reduction of characters sent. Reducing the numbers of characters sent is the point of both strategies, and should be the criteria used for judging thier performance.

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

All art tends to the condition of MUSAK.

45. Re: [NETSIG:2222] 9600 BPS Repeater.

From: crompton@nadc.nadc.navy.mil (D. Crompton)
Date: Thu, 9 Nov 1995 11:27:27 -0500

To: netsig@tapr.org
Message-ID: <199511091627.LAA15167@nadc.nadc.navy.mil>
Rendered body type: text/plain

I think that some TNC's have ID support built-in but if not you may have
to add it. There would be no provision though for collision avoidance between
the ID and users wanting to send data at that time. CD at 9600 baud is from
data and the ID would not look like data. Typically this is not a problem.
I do it here - I CW ID. This is not required though. You could connect the
TNC to a computer OR if the TNC will data ID that is all that is needed.

There IS a good reason to either voice or CW ID the repeater though. 9600
baud data sounds like background noise - I.E. anyone listening on the channel
will generally not know that it is in use. They may only hear a subtle change
in background noise. So voice (or other) users may move in thinking that it
is an unused channel.

I currently ID my 9600 baud repeater every 5 minutes for this reason. It also
gives YOUR users an opportunity to hear the signal to see what it's quality
is at any given location.

You must mute the data stream when applying the ID - the DATA from the TAPR
TNC is always there. This will overpower the ID. I currently use a small relay
to do this (it was easy) but you could use a FET or some other electronic switch
switch.

Doug

46. 6 MeterPacket via Meteor Scatter - revisited

From: Orville Beach <Orv@micom.com>
Date: Thu, 09 Nov 1995 08:58:21 -0800
To: netsig@tapr.org
Message-ID: <s0a1c34e.035@micom.com>
Rendered body type: text/plain

Several months ago a few of us discussed
setting up 6m 9600 baud ports for testing
meteor scatter as a method for moving packet
traffic.

I have most of the euipment collected now
for a 6m 9600 buad packet port. What
frequency should I put it on?

In a recent article in QST, Lou Horzepa said
they used 50.62 MHz for packet MS, but that
was at 1200 baud. I'm thinking perhaps we
ought to pick a different frequency for 9600
baud?

I'm open to suggestions, folks.

TIA - Orv - WB6WEY
orv@micom.com

47. Re: [NETSIG:2222] 9600 BPS Repeater.

From: wa1jhk@ix.netcom.com (Dave Maciorowski)
Date: Thu, 09 Nov 1995 10:02:40 -0700
To: netsig@tapr.org
Message-ID: <199511091702.JAA20916@ix9.ix.netcom.com>
Rendered body type: text/plain

Hi Dino,

>It is time for a 9600 BPS repeater here in Southern CA! My plan is to
>purchase TWO Motorola Mitreks and the TAPR modem w/ clock and bit regen
>kits. What else do I need? How do I get the thing to ID every 9.5 minutes.
>Who has done this and can give me some technical advise. I will say that we
>are planning on using 2 Mitreks for this reason...
>
>1. Better isolation.
>2. If the transmitter or the receiver goes out in any of the radios, we can
>just switch them! (Pretty smart huh!)
>
>Any advise would be helpful. We are building a 386 rackmount computer and a
>DRSI type card for a TCP/IP router. This will be added later. Right now, I
>need a stand-alone repeater. 73!

     Bdale, N3EUA, built the 9600 baud 447.250 repeater on Pike's Peak in

Colorado Springs, CO, from a Mitrek. He documented his work at
http://www.gag.com/papers/mitrek.html. This repeater has been on the air
for several years serving Southeast Colorado at 44.32.4/24.

     I built the 9600 baud 447.200 repeater on Conifer Mountain near Denver
serving the Northeast Colorado Backbone at 44.20.4/24. This repeater was
built from a UHF Micor and has been on the air continuously for the last
year. Documentation is being prepared for the Colorado Amateur Radio Page
at http://www.rmsd.com/hamradio. (I know I promised this info to several
people -- sorry, guys, it's coming :-)

     Both of these repeaters are connected to the Internet and AMPRnet via
N0IAK's Internet Firewall/Gateway.

     Both repeaters use the TAPR 9600 baud modem with bit-regenerator
option. For the 447.200 repeater, I installed the modem in an MFJ-1270B. I
programmed the beacon to ID the repeater every 9.5 minutes. Like you, we
have a router under construction to be installed at the repeater site at
some future time. The 447.250 repeater uses a Gracilis switch for routing
to a 2-meter 1200 baud frequency.

     We operate the LAN with a TxD of 150 msec. That allows for 40 msec at
the repeater and 110 msec at the user radio -- there is plenty of room in
the timing for "acceptable" 9600 baud radios.

     What radios are in use on our LAN? Mostly Micors. There's also a Tek,
an ICOM IC-471 and a Kantronics D4-10. A Kenwood TM-451 and an ICOM IC-30
were retired because of transmit modulation problems -- they just slow the
LAN down.

     IMHO, there is actually very little reason for a mountain-top router
unless there are other digital channels located there. Currently, our LAN
has five gateways on it: one routes to the rest of the AMPRnet and gateways
to the Internet; the other four gateway to local 2-meter 1200 and 9600 baud
channels using a cellular coverage approach. When our 56kbps repeater is
installed, the local gateways will move there.

     Our mountain-top router will route amongst the 9600 baud repeater, the
56kbps repeater and two or more high-speed backbone channels. In addition,
we are preparing a digitized/compressed voice system to link the voice
repeaters via the high-speed digital backbone channels.

>What else do I need?

     You need a way to remotely disable the repeater's transmitter and any
auxiliary transmitters you have there (FCC requirement). A simple UHF
control receiver and DTMF decoder can do this -- we use control outputs from
a co-located voice repeater's controller. It may also be prudent to use
this controller to be able to reset the TNC, though we've not had this
problem in our year of operation.

     I suppose I can't stress enough how important it is to not scrimp on a
duplexer. You don't want RF problems. Be sure to add a second-harmonic
filter to the output of your repeater's transmitter -- again, just good RF
engineering practice.

     If I can answer any other questions, please write.

     73,

          Dave

Dave Maciorowski, WA1JHK
Colorado Repeater Association, Inc.
  Serving the Colorado Front Range with Voice and Data, 6-Meters to 1.2 Gig

Internet: wa1jhk@ix.netcom.com or wa1jhk@amsat.org
AmprNet: wa1jhk@bbs.n0iak.ampr.org
AX.25:   wa1jhk@n0iak.#neco.co.usa.noam
Voice: 303-841-4836

48. Re: [NETSIG:2214] Re: TNC-based compression

From: ssampson@icon.net (Steve Sampson)
Date: Thu, 9 Nov 1995 13:09:06 -0600
To: rdonnell@eskimo.com
Cc: netsig@tapr.org
Message-ID: <199511091909.NAA19166@ns2.icon.net>

Rendered body type: text/plain

```
>    2 flag bytes
>   14 bytes total for a direct connect - 7 per callsign
>    1 control flag
>    1 PID flag (I frames only)
>      ---- data goes here ----
>    2 frame check bytes ( CRC )
>   ___
>   20 bytes of direct overhead.
>
>Other areas of overhead occur if bit stuffing is needed to prevent HDLC
>control bit patterns (like flags) from occuring in the data stream.
```

It does seem a lot doesn't it? I have a couple of Part 15 spread spectrum radios that I bought surplus, that work in the 900 MHz band (100 mW - big deal right). They use the units serial number as the callsign (5 digits). But as the speed goes up, the overhead seems insignificant. At speeds like 1200 though, I'd rather have all that callsign overhead in error correction bits.

It seems like the old PDP-11 had a character set that only covered the capital letters and the numbers 0 through 9. That would be Radix 64 I guess, but it took only 6 bits per character. But with 26 letters in the english alphabet, that means we can reduce this to 5 bits per letter, and 4 bits per SSID. That's a whopping savings of (56-34) 22 bits per call. Let's say the typical user only has two callsigns (source/destination), that's 44 bits that are thrown away. Just think what 44 bits of error correction could do (if saving a retransmission is a good thing). The Tactical Data Link the military uses on HF has 36 bits of error correction, so that's a typical number used in the industry. But an alternative can be to continue with no error correction, and just reduce the AX.25 address set to the 26 capital letters of english, and the SSID of 0 - 15.

So we can't do anything about the 6 bytes of flags, control, PID, FCS, but we can reduce the address to non-bit-shifted 5 bit capital letters and a 4 bit SSID. This would provide a direct connect in 8.5 bytes rather than 14 bytes, or a savings of 5.5 bytes, or (6.67 ms times 8.5 bytes) 56.7 ms to transmit, versus (6.67 ms times 14 bytes) 93.4 ms, or 36.7 ms less.

Better yet, you could get rid of the callsign, and use binary assigned addresses. Ethernet is 48 bits a call, AX.25 is 56 bits a call, but it seems like 8 to 32 bits is plenty, reference the internet and ArcNet.

That would be compression of a sort.

```
--
Steve/n5owk
```

49. Re: [NETSIG:2219] Re: TNC-based compression

From: ferracci@imaginet.fr (Laurent Ferracci - F1JKJ)
Date: Fri, 10 Nov 1995 05:57:53 GMT
To: netsig@tapr.org
Message-ID: <199511100556.GAA09389@icaria.imaginet.fr>
Rendered body type: text/plain

On Thu, 9 Nov 1995 01:57:14 -0600, you wrote:

```
>>            What is DAMA?
>
>I'm not sure exactly what the appreviation stands for.  Essentially it's
>the German (?) protocol with a master/slave approach for sending data
>from the users to a node.  It greatly reduces the collisions from hidden
>transmitters which is the bane of most of our existing networks.
>
>  D?  A?  Multiple Access...
```

That is Demand Assigned Multiple Access.
The protocol could be summed up by this single sentence: "speak only when you're asked to".

It may sound stupid, but it greatly reduces collisions: Hidden transmitters don't exist any more.

If you want a more precise desciption, have a look at TAPR's Packet Status Register #58 P12.

```
-- +------------------------------+----------------------------+
-- | From Laurent FERRACCI, F1JKJ  |  > ferracci@imaginet.fr <  |
-- | Montpellier, FRANCE           |  F1JKJ @F1RVP.FMLR.FRA.EU  |
```

```
-- +------------------------------+----------------------------+
--
-- [ PGP key on public-key servers ]
```

50. Re: [NETSIG:2222] 9600 BPS Repeater.

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 10 Nov 1995 03:24:03 -0700
To: netsig@tapr.org
Message-ID: <199511101024.DAA05013@acca.nmsu.edu>
Rendered body type: text/plain

```
At 01:59 AM 11/9/95 -0600, you wrote:
>It is time for a 9600 BPS repeater here in Southern CA!  My plan is to
>purchase TWO Motorola Mitreks and the TAPR modem w/ clock and bit regen
>kits.  What else do I need?  How do I get the thing to ID every 9.5 minutes.
>Who has done this and can give me some technical advise.  I will say that we
>are planning on using 2 Mitreks for this reason...
>
>1.  Better isolation.
>2.  If the transmitter or the receiver goes out in any of the radios, we can
>just switch them!  (Pretty smart huh!)

        And fix the broken one in your spare time? Just curious about where
your getting Mitex radios. They went extinct at the Fort Tuthill hamfest. Be
careful with your receiver antenna routing Dino since it has a lot to do
with radio isolation. Done right you get over 100 DB of isolation.


>
>Any advise would be helpful.  We are building a 386 rackmount computer and a
>DRSI type card for a TCP/IP router.  This will be added later.  Right now, I
>need a stand-alone repeater.  73!

        I hope the DRSI card IS a DRSI card! I have the TAPR modem and it
interfaces with the DRSI card fine, after you get over the typo in the TAPR
instructions. If it is someone elses card be careful!

>
>Dino
>
>
>
Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
```

51. Re: [NETSIG:2219] Re: TNC-based compression

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 10 Nov 1995 03:24:07 -0700
To: netsig@tapr.org
Message-ID: <199511101024.DAA05017@acca.nmsu.edu>
Rendered body type: text/plain

```
At 01:57 AM 11/9/95 -0600, you wrote:
>"Karl F. Larsen" <k5di@acca.nmsu.edu> writes:
>
>> >The impression I'm getting from all the discussion is that adding general
>> >end-to-end compression is complicated and won't yield that big of an
>> >improvement.  I.E.  the ROI isn't that great.
>>
>>         What is a ROI?
>>
>> >
>> >I believe there are other areas were we would get more "ROI".
>
>Return On Investment....   How much improvement do we get for the
>effort extended.

        OK Bill, what other areas will the ROI be greater?



>
>> >  2.  Adding some sort of DAMA protocol.
>>
>>
>>            What is DAMA?
>
>I'm not sure exactly what the appreviation stands for.  Essentially it's
>the German (?) protocol with a master/slave approach for sending data
>from the users to a node.  It greatly reduces the collisions from hidden
```

>transmitters which is the bane of most of our existing networks.
>

        Bill if you don't know what is or what it does, why use it? There
was some work done by Phil Karn about 4 years ago that addresses the hidden
transmitter problem but it never got off the ground either. I have the paper
and will send it to you if your interested.

> D? A? Multiple Access...
>
>> Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
>
>Bill
>
>
>
Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

52. Kantronics Data Engine

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 10 Nov 1995 08:33:07 -0700
To: netsig@tapr.org
Message-ID: <199511101533.IAA08371@acca.nmsu.edu>
Rendered body type: text/plain

Has anyone been able to make the JNOS version 1.00 run in a Data
Engine? If so please tell me what is difficult about getting it to run. Is
it reliable? I am thinking of a snow covered mountain top at 11,000 feet
amsl. Don't want to make many trips to the site.

-karl
Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

53. Re: [NETSIG:2222] 9600 BPS Repeater.

From: Bob Nielsen <nielsen@primenet.com>
Date: Fri, 10 Nov 1995 11:16:44 -0700 (MST)
To: netsig@tapr.org
Message-ID: <Pine.LNX.3.91.951110111432.403B-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

On Thu, 9 Nov 1995, Dino Darling wrote:

> It is time for a 9600 BPS repeater here in Southern CA! My plan is to
> purchase TWO Motorola Mitreks and the TAPR modem w/ clock and bit regen
> kits. What else do I need? How do I get the thing to ID every 9.5 minutes.

One way I have seen is to attach it to a TNC which is set to beacon every
xx minutes (in normal TAPR firmware mode, not KISS).

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen   AX.25: w6swe@wb7tls.az.usa.noam

54. Re: [NETSIG:2208] Re: TNC-based compression

From: pipe2@oeonline.com
Date: Fri, 10 Nov 95 18:06 EST
To: netsig@tapr.org
Message-ID: <m0tE2We-0003IgC@oeonline.oeonline.com>
Rendered body type: text/plain

At 09:59 AM 11/8/95 -0600, you wrote:
>At 07:07 AM 11/7/95 -0600, you wrote:
>>On Mon, 6 Nov 1995 08:22:12 -0600, you wrote:
>>
>>>   Seems like everyone commenting on this idea has little or no
>>>experiance with REAL nodes. For example the thought that a 1200 baud packet
>>>network runs at 1200 baud. That is poppy-cock...:-) Let me give a small
>>>example. Consider 2 1200 baud guys working each other. The data flows at
>>>less than 600 baud for many reasons. They include but are not limited to:
>>>TXD, ACK packets, Collisions, poor setup.
>>
>>???
>>
>>Seems like Karl F. Larsen has little or no experience with what a BAUD
>>is :-))
>

>   Alas I know what a baud is, but baud is mis-used here to mean
>Bytes/second and many have no idea what a byte/second is. And in fact people
>like to show there experts and use bits/second and bytes/second both as b/s.
>This makes it very hard to understand.

A little clarification:

        BITS per second is abreviated b/s

        BYTES per second (a serial byte is 10 bits, a parallel byte is 8)
        is abreviated B/s

        Megabits per second is abreviated Mb/s

        Kilobits per second is abreviated kb/s

The most imprortant difference to remember (and I see this screwed up ALOT
in MANY places!; computer magazines included), is that Bytes per second is a
CAPITAL B (B/s), while Bits per second is a LOWER CASE B (b/s). This can be
EXTREAMLY confusing!!!

        -Bill kb8wyp

55. Re: [NETSIG:2229] Re: TNC-based compression

From: "Tom Moulton" <tmoulton@ram.net>
Date: Sat, 11 Nov 95 08:48:41 EST
To: netsig@tapr.org
Message-ID: <15021573.2027@ram.net>
Rendered body type: text/plain

>Better yet, you could get rid of the callsign, and use binary assigned
>addresses. Ethernet is 48 bits a call, AX.25 is 56 bits a call, but it
>seems like 8 to 32 bits is plenty, reference the internet and ArcNet.
>

When we agree on the method of sending Negotiation information it should
also yeild a method for sending other information.

I plant to include in ROSE a method to change to a two byte address.

(Oh yea, the WE is Brian/KO4KS, Howie and I who have been discussing the
 actual technique of passing Negotiation/control information within the
 confines of AX25. We are pretty close to agreeing...)

****
Thomas A. Moulton, W2VY
w2vy@ram.net

56. Re: [NETSIG:2233] Kantronics Data Engine

From: hank_oredson@MENTORG.COM (Hank Oredson)
Date: Mon, 13 Nov 95 10:10:46 PST
To: netsig@tapr.org
Message-ID: <9511131010.ZM19165@hanko>
Rendered body type: text/plain

On Nov 11, 3:47am, Karl F. Larsen wrote:
> Subject: [NETSIG:2233] Kantronics Data Engine
>   Has anyone been able to make the JNOS version 1.00 run in a Data
> Engine? If so please tell me what is difficult about getting it to run. Is
> it reliable? I am thinking of a snow covered mountain top at 11,000 feet
> amsl. Don't want to make many trips to the site.
>
> -karl
> Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->
>
>-- End of excerpt from Karl F. Larsen

Johan used to live a few miles south of me, and the DE version
of JNOS was written and tested while he was there. Our experience
with it was that it was "not quite finished yet.", and Johan intended
to finish it. However, his move to Japan halted that project.

>From my own observations, it was not stable enough to place in
a mountaintop situation. Perhaps Johan has been able to finish
the remaining work (as I understood, it was only a few details).

   ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

57. RE: Hi

From: Ron Curry <recurry@insighttec.com>
Date: Sun, 12 Nov 1995 22:54:13 -0800
To: "'N0olx'" <n0olx@gw1.ncdl.com>
Cc: "'netsig@tapr.org'" <netsig@tapr.org>,
        "'TCP-Group@UCSD.EDU'"
 <TCP-Group@UCSD.EDU>
Message-ID: <01BAB151.C9FBCE20@yankee.insighttec.com>
Rendered body type: text/plain

Brent,
I'll have to get the TEKK dealer phone number for you later since I left it at work. If you call TEKK though, and tell them you are a ham they will give you the phone number. The owner of the dealership is George. He's a great guy and has good prices. ORDER IT WITH YOUR FREQUENCY INSTALLED!

No need to modify the KPC9612 for 19200 it's ready from the factory. The mods for the TEKK come from Paccom. They sell a kit of parts to open up the bandwidth of the radio. It might be worth while to purchase one from them already modified if this is what you intend to do. The mod requires you to change the IF filters and realign the radio. No problem if you have the right equipment - difficult if you don't. If you want plug and play spend the extra money and get the D4-10.

Ron

From: N0olx[SMTP:n0olx@gw1.ncdl.com]
Sent: Sunday, November 12, 1995 4:24 PM
To: recurry@insighttec.com
Subject: Hi

I enjoyed your recommendations on 9600 baud packet setups. I have a few questions so I'll run them by you and see if you can help.

Where can I buy a tekk radio? An article in qst said that you can't buy them direct from the manufacturer. Do you know of a place that is cheaper than paccom?

Do you have a text file or know where I can get a text file on modifying a kpc9612 and tekk radio to go 19200? What is the performance like when pushing these items to 19200?

Thanks for any help that you can offer.

73 Brent

58. DCD paper?

From: rishmael@ionet.net (Rex H Ishmael)
Date: Mon, 20 Nov 1995 21:13:15 -0600
To: netsig@tapr.org
Message-ID: <199511210311.VAA01971@ion3.ionet.net>
Rendered body type: text/plain

I am looking for a written explanation of the DCD mod. I believe it was a part of the 7th CNC, and preseneted by N7CL. Is there a copy of it anywhere for download?
==========
Rex Ishmael, Environmental Engineer, Halliburton Energy Services
E-Mail:rishmael@halnet.com
Amatuer Mail: WD0AJG@WD0AJG.#SCOK.OK.USA.NOAM
==========

59. Nexus / Spread Spectrum System?

From: rwhiting@winternet.com (Rick Whiting)
Date: Tue, 21 Nov 1995 15:11:44 -0600
To: ham-digital@ucsd.edu, netsig@tapr.org, ptownson@massis.lcs.mit.edu
Message-ID: <199511212111.PAA06466@icicle>
Rendered body type: text/plain

I am looking for someone with experience using spread spectrum in a WAN application in the 900 Mhz ISM band. I am especially interested in contacting someone with experience with the Nexus Telecommunications Ltd. frequency-hopping spread-spectrum 2-way paging system.

```
 ---------------------------------------------------------------------------
| Richard A. (Rick) Whiting          Phone:  + 1 612 550 1213            |
| 5780 Rosewood Ln. N.               E-mail: rwhiting@winternet.com      |
| Plymouth, MN 55442-1411            Packet: W0TN @ WB0GDB.MN.USA.NOAM   |
| U.S.A.                             Fax:    Number on request           |
 ---------------------------------------------------------------------------
```

60. FBB & Reject ?!?

From: INFOPLAN.IPLAN10.LOUISK@cape_smtp_gw.iplan.co.za
Date: Mon, 27 Nov 1995 17:58:51 +0200
To: netsig@tapr.org
Message-ID: <s0b9fc87.063@cape_smtp_gw.iplan.co.za>
Rendered body type: text/plain

I am using FBB 5.15c at ZS0DLD.TVL.ZAF.AF.

Recently the need arose to reject some buletins. I added it to the
reject.sys file, but it just keeps on flooding the bbs. Is there anyone that
had the same problem and found a solution ? Can somebody maybe as
the author, F6FBB ?

73's Louis, de ZR6ABC.
Louis.Kruger@iplan.co.za

61. SATGATE ?!?

From: INFOPLAN.IPLAN10.LOUISK@cape_smtp_gw.iplan.co.za
Date: Mon, 27 Nov 1995 18:01:51 +0200
To: netsig@tapr.org
Message-ID: <s0b9fd3d.064@cape_smtp_gw.iplan.co.za>
Rendered body type: text/plain

We intend to start a sattelite gateway in the northern part of ZAF
country.

Two problems questions:

1. Where do one get the appropriate software ?
2. Who does one contact to gain access to the sattelite network ?

Louis, de ZR6ABC.
Louis.Kruger@iplan.co.za

62. Re: [NETSIG:2241] FBB & Reject ?!?

From: rmackay@cycor.ca (Ron VE1AIC)
Date: Tue, 28 Nov 1995 22:06:32 -0400
To: netsig@tapr.org
Message-ID: <199511290206.WAA16968@bud.peinet.pe.ca>
Rendered body type: text/plain

```
>I am using FBB 5.15c at ZS0DLD.TVL.ZAF.AF.
>
>Recently the need arose to reject some buletins.  I added it to the
>reject.sys file, but it just keeps on flooding the bbs.  Is there anyone that
>had the same problem and found a solution ?  Can somebody maybe as
>the author, F6FBB ?
>
>73's Louis, de ZR6ABC.
>Louis.Kruger@iplan.co.za
>
>
Please supply sample of the lines in your Reject.Sys.
This function does work well and I use it a lot.
Here's a sample
# rejet.sys
# File for rejecting messages.  They are rejected with N-BID:
# * and ? can be used as wildcards (as in MS-DOS)
#
#Type from @BBS      To      BID         Max size:
R B     *           WW      *        *            0
# Reject @WW bulletins from anyone
H B    VEXXXX *           *        *            0
# Hold bulletins from VEXXXX
R B    *            AMSAT  *       1*           0
#Reject @AMSAT bulletins with bad bids
```

December 1995

Original source file: netsig.9512
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/netsig/mail_archive/netsig.9512

1. Radios for 9600 baud packet (long)

From: Orville Beach <Orv@micom.com>
Date: Wed, 29 Nov 1995 17:04:37 -0800
To: netsig@tapr.org
Message-ID: <s0bc950a.054@micom.com>
Rendered body type: text/plain

I've been watching the occasional thread about suitability of various radios for 9600 baud packet, especially those suitable for use as a repeater.

I asked a local ham who's very active in (voice) repeaters and repeater linking what he thought of some of the commercial radios that had been mentioned. Here's what he said:

"It's true that a 150.8 - 174 Mhz Micor won't tune to the ham band. The RX helicals won't go that low. You need the 138 - 150.8 version. The 150.8 - 174 Mitrek will go there just barely. It all depends on the individual Mitrek and how low in the ham band you want to go.
I never recommend the Mitrek for repeater service. There is no way to get the TX out of the RX completely. There will always be some inter-chasis desense. Also, the Mitrek's RX LO multiplier stages like to get into the
TX exciter multiplier stages and give you byproducts that are just 60 db down in the strangest places all over the band and also a good amount out of the band. There is no way to fix that problem. Its hard to be a good neighbor when you generate garbage on high-band that is only 60db down. On da other hand, a Micor makes a fine repeater. It has none of the problems associated with the Mitrek and it also handles a much higher duty cycle. Given a choice for 2M, I'll use a GE MASTR II, Exec II or an MVP before I'd look at any other comercial radio. They work better, are easier to duplex and seem to last forever."

I asked him more specific questions about packet suitability of these radios and got:

"I understand why you feel comfortable with the Mitrek, since it has IF filters you can work with. To make a Mitrek work right, you'll need two of them to get them to duplex right.

The GE's can do 9600 baud just fine. I've attached a basic procedure for the MVP, but its the same for all the GE radios. Instead of using the "gimic" capacitor, I like to use the miniature Johanson variables. They fit ever so nice and they are quite stable compared to a "gimic". I've swept the IF's on a GE, modified like in the attachment, and found it to be quite good."

Maybe this info will help point people in the right direction. I thought it was useful.

(I didn't attach the refernce he mentioned,

as it's quite lengthy. If there's enough
interest, I'll post it).

HTH - Orv - wb6wey
orv@micom.com

2. Need maxar/9600 info

From: bobsmith@mail.i2020.net (Robert L. Smith)
Date: Mon, 4 Dec 95 10:34:08 EST
To: netsig@tapr.org
Message-ID: <Chameleon.951204104558.bobsmith@>
Rendered body type: text/plain

To All --

A local user with capabilities of providing a valuable extension to our backbone link has
aquired a Motorola Maxar 440 rig. We looking for any and all information regarding
modifying this radio for direct fm for attachment to a g3ruh type modem at 9600bps.

Any and all information will be appreciated, direct postings, leads to ftp or
web sites or published articals, etc.

The radio in question is model number   L44TGB3135DM

Would also like to hear from anyone with experience with these radios, good, bad or
indifferent. We have been using mostly tekk micros and have not worked with Motorola
rigs yet.

Does anyone know of a source of schematics/manuals? The local Motorola outlet
seems very reluctant to cooperate.

  Robert L. Smith   804/745-1065   bobsmith@i2020.net
  Smith Machine Works, Inc.   wa4ypv@w4za.ampr.org

3. 150-174 Micors

From: ve2nrn@ve2noq.ampr.org
Date: Mon, 04 Dec 95 19:14:03 EDT
To: netsig@tapr.org
Message-ID: <138794@ve2noq.ampr.org>
Rendered body type: text/plain

Hi everyone. After seeing so many messages here and there that 150-174
motorala micors can't be used on the 2m, I better let you know that you
can use them for 2m after a simple mod. You need a small length of 1/4"
copper tubing. Use a tube cutter and cut 5 pieces that are 1/4" to 3/8"
long. Take the cover off the receive resonator and screw the pieces of
copper on the end of each tuning screw. Put the cover back on, retune and
Voila!! A couple of us in the local club have modified so many of them
that we lost count (we were getting them for around 10$ CAN <grin>)
and a couple of those micors are being used as repeaters which work
great. The micor mobiles are big but at that price who can complain hi..
73 de randy
ve2nrn@ve2noq.ampr.org
randyn@lino.com

4. Re: [NETSIG:2244] Radios for 9600 baud packet (long)

From: Sid Ashen-Brenner <sashen@midusa.net>
Date: Mon, 4 Dec 1995 17:58:42 -0600
To: netsig@tapr.org
Message-ID: <199512042358.RAA05632@services.midusa.net>
Rendered body type: text/plain

At 04:00 PM 12/4/95 -0600, you wrote:

[much deleted]
>
>Maybe this info will help point people in
>the right direction. I thought it was
>useful.
>
>(I didn't attach the refernce he mentioned,
>as it's quite lengthy. If there's enough
>interest, I'll post it).
>
>HTH - Orv - wb6wey
>orv@micom.com

I'm interested!

Sid Ashen-Brenner n0obm @ n0obm.#ncks.ks.usa.noam
- -
Sid Ashen-Brenner (n0obm)   Packet: n0obm @ n0obm.#ncks.ks.usa.noam
Salina Regional Health Center   Fidonet: 1:295/6   Salina Packet Systems BBS

Salina, Kansas 67401
                                sashen@midusa.net

5. Suggestion on type of UHF Radio for backbone

From: Daniel Audet <daudet@QBC.Clic.Net>
Date: Mon, 4 Dec 1995 21:34:08 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.SUN.3.91.951204212743.25941B-100000@clic1.qbc.clic.net>
Rendered body type: text/plain

Hi i need your input for a good radio for a dedicated backbone
we currently have 2 Marconi that are getting old.
The link is line of site and we use beam in both direction
i was thinking of the TEAK portable.But one of the site is a commercial site
with broadcast FM and 2 cellulars site along with a lot of RCC.
Need a radio that has a good front end.
Any suggestion on used Motorola rig or other and also a place to get them
and average price.
the freq by the way is 441,050+

Thank ahead for you help?

---
73 de Dan,   ax.25net: VE2PNK@VA2BBS.#QBC.PQ.CAN.NA
                  amprnet: ve2pnk%va2bbs@ve2ums.ampr.org
                 internet: daudet@qbc.clic.net
                      fax: 418-622-5363
                      tel: 418-622-3238 ext. 2
---

6. Radios for 9600 Baud - GE Info

From: Orville Beach <Orv@micom.com>
Date: Tue, 05 Dec 1995 08:30:06 -0800
To: netsig@tapr.org
Message-ID: <s0c403c3.090@micom.com>
Rendered body type: text/plain

Enough people have asked for this that it
makes sense to post it to the list -

[This is mostly unedited]

The GE's can do 9600 baud just fine. I've
attached a basic procedure for the
MVP, but its the same for all the GE radios.
 Instead of using the "gimic" capacitor, I
like to use the miniature Johanson
variables. They fit ever so nice and they
are quite stable compared to a "gimic".
I've swept the IF's on a GE, modified like
in the attachment, and found it to be quite
good.

73,

        Mark

Newsgroups: rec.radio.amateur.digital.misc
From: gary@ke4zv.atl.ga.us (Gary Coffman)
Subject: Re: 2-m homebrew packet rig?
Message-ID:
<1993Sep16.032150.10590@ke4zv.atl.ga.us>
Reply-To: gary@ke4zv.UUCP (Gary Coffman)
Organization: Destructive Testing Systems
References:
<1993Sep12.134230.19253@ke4zv.atl.ga.us>

<1993Sep14.160053.26686@newsgate.sps.mot.com> <SBROWN.93Sep15085034@charon.dseg.ti.com>
Date: Thu, 16 Sep 1993 03:21:50 GMT
Lines: 99

In article
<SBROWN.93Sep15085034@charon.dseg.ti.com>
sbrown@charon.dseg.ti.com (Steve Brown)
writes:
>In article
<1993Sep14.160053.26686@newsgate.sps.mot.com> Chris Terwilliger
<a229aa@email.sps.mot.com> writes:
>> In article
<1993Sep12.134230.19253@ke4zv.atl.ga.us>
Gary Coffman,
>> gary@ke4zv.atl.ga.us writes:
>> >> >For 9600 baud, the Micor is fairly
trivial to convert,
>> >> please elaborate...
>
>Yes, please elaborate _on the net_. I
tried to send you a message every
>way I could think of and got kickbacks.

Well (aaarrrgg) my Motorola manual is out on
loan so I can't give you a part number by
part number mod sheet. It's basically simple
though. You just disconnect the audio amp
from the modulator and connect your TNC
output instead, and you disconnect the audio
amp from the discriminator and connect your
TNC instead. It can't get much simpler than
that.

Since I *do* have my GE manual handy, I'll
give you the method for making a UHF Exec II
or MVP work on 9600 baud. It isn't so
simple.
On the limiter detector board, U602 is the
limiter detector IC. Pin 1 is the audio
output, but we don't want to take our signal
 directly from there, we'd load it too much.
Instead we take it at J601 pin 2. That's
isolated by a 180k resistor from U602.

Now we'll only have 0.2 volts of signal
here, and that isn't enough to drive our
TNC. We could try to take the signal from
the emitter of Q603 but we'd have
bandlimited de-emphasized audio, not good.
So we outboard an OPamp and set it for a
gain of 5, just use a 900k feedback resistor
in conjunction with the 180k resistor
already in the radio. This will give us a
volt to the TNC which will make it happy.
Note that the signal at J601-2 is offset
+0.35 volt DC so we have to null that
voltage with a bias pot in the non-inverting
 input to our OPamp.

All is not well yet, however. The radio uses
a 4 pole crystal filter in the IF which is
too narrow for our purposes at +/- 7 kHz.
We've got to widen this a bit. There are
several ways to approach this problem, but
the easiest is to solder a gimmick capacitor
across pins 1 and 3 of FL502 and twist for
the desired response. FL502 is the filter
nearest J502, the +10 volt power connection.
Solder two 1 inch insulated hookup wires,
one to pin 1 and the other to pin 3. Now
twist these tightly together for the desired
response, about +/- 10 kHz response. This is
easiest done with a sweeper.
You may need to touch up C504 and L503 for
flattest response.
Cut off any excess lead length on the
gimmick and put a touch of glypt on it to
hold it in place.

Now the easy part is over. We have to
modulate this thing with our 9600 baud
signal. The modulator is a classic variable
reactance phase modulator. That won't do for
our purposes so we're going to turn the
radio into an FM modulated transmitter.
First we're going to operate on our Icom
(channel element) by removing C1. That's the
square green bypass capacitor just below the
piston trimmer.
The varactor in the Icom is too small to
give us the swing we need, so we rob the
varactor from the phase modulator, CR180,
and parallel it across the varactor in the
Icom. Now we have to cut the trace going to
XY101-4, the Icom socket on the exciter
board. Be sure when you cut the trace that
you cut *after* the connection to P902-3 or
you'll lose your receiver temperature
compensation.

Ok, now we need about 2 volts of signal to
drive the varactor in the Icom, and we want
to keep our compensation voltage too which
will be in the 4.0-6.0 volt range depending
on temperature.
To do that, we're going to use an OPamp as a
voltage summer. Feed the TNC audio, 1 volt,
and the compensation voltage to the
inverting input of the OPamp. Take the audio
through a 100k resistor and take the
compensation voltage via a 400k resistor
connected before the trace cut. Use a 50k
feedback resistor. Use another section of
the OPamp as an inverting unity gain amp
with a 2.5 volt positive offset in the
non-inverting input. This gets the
compensation voltage going back in the
right direction and biases the varactors
properly. You should now have a 4.5-5.5 volt
positive DC output with a 2 volt symetrical
audio signal riding on it. Note that we've
halved the compensation voltage swing
because we've doubled the amount of
varactor. Now connect the output of the
OPamp to the XY101 side of the trace cut.
You should be able to get 4 kHz deviation.

There *is* another way, but it puts
pre-emphasis on the signal.
That's to just accept the phase modulator
and put the audio in on the Channel Guard
input, P902-9. It takes a *lot* of signal
though to get 4 kHz deviation. You'll still
need the OPamp.
If you do this, you'll want to add a
de-emphasis network in the receive section.
You can do this by adding a capacitor in the
feedback section of the receive OPamp to
give a 6 db per octave roll off. Don't try
to use the speaker output. It's bandlimited
as well as de-emphasized. That won't work
well at all. The modem operation will be
compromised, but may work if others in your
area are using pre-emphasis/de-emphasis in
their radios. I don't recomend it, but it
is easy to do.

Gary
-- Gary Coffman KE4ZV |"If 10% is
good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus,
it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for
Uncle Sam."| emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens
       |
[End of Quote]

HTH - Orv - wb6wey

7. Re: [NETSIG:2248] Suggestion on type of UHF Radio for backbone

From: mark@tetherless.com (Mark Oppenheim)
Date: Tue, 5 Dec 1995 13:24:09 -0800
To: netsig@tapr.org
Message-ID: <199512052124.NAA20722@gorgor.pa.tetherless.com>
Rendered body type: text/plain

At 01:20 PM 12/5/95 -0600, Daniel Audet wrote:
>Hi i need your input for a good radio for a dedicated backbone
>we currently have 2 Marconi that are getting old.
>The link is line of site and we use beam in both direction
>i was thinking of the TEAK portable.But one of the site is a commercial site
>with broadcast FM and 2 cellulars site along with a lot of RCC.
>Need a radio that has a good front end.
>Any suggestion on used Motorola rig or other and also a place to get them
>and average price.
>the freq by the way is 441,050+
>

I would certainly never consider a TEKK radio on a site that has any RF interference potential. Their small size immediately tells you that there's not much front-end filtering there. Also, the Tekk radios have this reputation for being "drifty" - of course, what percentage of this drift is attributable to the xtals being used or the radio's oscillator could be debated. This is a major concern at 9600 baud where frequency accuracy is of paramount importance.

I've modified a Micor for 9600 baud (assuming that's what you're using as a backbone) and it works. I kept the RX powered during xmit (don't know if this made a major difference), disabled the AFC on recieve (so the RX wouldn't slew around) and opened the audio path after the discriminator on RX to eliminate all the capacitance in this circuit (this means that you'll have no amplified speaker audio, but that's life) and the radio worked quite well.

TX was nothing more than inserting the audio directly into the element.

HOWEVER, the Micors are getting elderly, and I'd only use these if a good micor fell into my lap for next-to-nothing. The Motorola Mitreks seem to be quite popular, and they're smaller than the Micor and come in flavors of 30-110 watts, depending on band and version. I would also get a torch or a 300W soldering iron and re-flow the soler on both sides of the helical filter (cures the famed Mitrek "intermittent RX sensitivity" problem) and clean and re-seat the connector interface board at the front of the radio (cures intermittent "no rx audio) if you're using that connector for modem audio.

Mitreks can be found for less than $400, with some I've seen going for as low as $150. The 450-470 versions of the Mitreks will tune to 441 MHz with no problem.

Mark

8. Re: [NETSIG:2248] Suggestion on type of UHF Radio for backbone

From: Richard Hallman <ki3v@connectus.com>
Date: Tue, 05 Dec 1995 07:46:48 pst
To: netsig@tapr.org, daudet@QBC.Clic.Net, netsig@tapr.org
Message-ID: <30C4696C-00000001@rnodx.org>
Rendered body type: text/plain

>Hi i need your input for a good radio for a dedicated backbone
>we currently have 2 Marconi that are getting old.
>The link is line of site and we use beam in both direction
>i was thinking of the TEAK portable.But one of the site is a
commercial site
>with broadcast FM and 2 cellulars site along with a lot of RCC.
>Need a radio that has a good front end.
>Any suggestion on used Motorola rig or other and also a place to get
them
>and average price.
>the freq by the way is 441,050+
>
>Thank ahead for you help?
>
>

```
>
>-------------------------------------------------------------------
--------
>73 de Dan,       ax.25net:    VE2PNK@VA2BBS.#QBC.PQ.CAN.NA
>                  amprnet:    ve2pnk%va2bbs@ve2ums.ampr.org
>                 internet:    daudet@qbc.clic.net
>                     fax:    418-622-5363
>                     tel:    418-622-3238 ext. 2
>-------------------------------------------------------------------
--------
>
>

Motorola Mitrek wins by far!!!    Great on 1200 and with a few mods its
GREAT on 9600!!    Have 5 running here in N. Nevada right now on a user
freq and Backbone. Have another ready on 145.71(9600) and 4 other UHF's
to finish the Nevada Backbone system(@9600)....Also on 441.050.    Some
paths in excess of 95 Miles!!    Use the PacCom Spirt II.....Only way
to go...

 Also playingg around at 19.2 with the Mitrek.....Seems to be a
wonderful and STABLE platform...

           Good Luck

                        Rich  KI3V  Reno NV
**********************************************************
Richard Hallman               ki3v@connectus.com
11870 Heartpine St
Reno Nv  89506               ki3v@w7ta.#nonev.nv
**********************************************************
```

9. External 1.2kb modem for DRSI PCPA-1 ??

```
From: Charles Brabham <n5pvl@texoma.com>
Date: Wed, 6 Dec 1995 07:48:53 -0600
To: bbssig@tapr.org
Cc: netsig@tapr.org
Message-ID: <199512061348.HAA13934@mercury.texoma.com>
Rendered body type: text/plain
```

```
I'm looking for a 1200 bd modem for my DRSI PCPA-1's "disconnect header
serial port". Normally, DRSI's 300 bd HF modem is plugged in there, but I'm
no longer involved in HF packet.

The disconnect header port sends synchronous data in AX.25 format to an
external modem, and can be configured for RS-232 or TTL levels. Here are
some of the external modems DRSI sez have been interfaced to the port:

G3RUH 9600 modem          TexNet 9600 modem      HAL ST-7000 HF modem

GLB NetLink 19,.2 kb modem       Kantronics 2400 modem        DRSI 2400 modem


As you can see, none of these will do you much good for 1200 bd.  I have a
TAPR 9600 modem which will also interface with the PCPA-1, but unfortunately
there is no local 9600 activity yet, and a lowly 1200 bd modem would be much
more useful to me at this time.

I suspect that since the TexNet 9600 modem works OK, that the TexNet 1200
modem kit might be a good way to go.. Has anyone on the list tried this
previously, or have any good info related to the TexNet 1200 modem?

I have also heard that DRSI's 300 bd HF modem can be converted for 1200 bd
operation.. If anyone has info on that conversion, that would be great !
All I've been able to dig up is rumours, and no specific info as yet.

I'd like to hear from anyone who has found a good way to run 1200 bd on the
PCPA-1's external modem port, by whatever means..

Thanks!


73 DE  N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet:  n5pvl@texoma.com

Blow, ye winds
 Like the trumpet blows
But without all that noise.
```

10. BIT regenerator info

From: Edson Pereira <ewp@uranus.healthnet.org>
Date: Wed, 6 Dec 1995 12:21:55 +0000
To: netsig@tapr.org
Message-ID: <Pine.3.89.9512061230.B1049-0100000@uranus>
Rendered body type: text/plain

Does anyone know where I can find some info on the principle of operation
of the TAPR 9600 modem BIT regenerator, or any other BIT regenerating
technique?

Thanks in advance for any help.

Edson, N1VTN

11. "hidden" BPQ command help

From: Dave Wolf <wo5h@tapr.org>
Date: Wed, 6 Dec 1995 14:08:03 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199512062008.OAA05140@sys1.tapr.org>
Rendered body type: text/plain

I know there is the 'budlist' command in BPQ. It is my understanding
that there is an undocumented 'supplist' command to lidlist anyone you
don't want accessing the switch. What is this parameter name and are
there any unusual steps to use it?

Dave Wolf WO5H

12. Re: [NETSIG:2252] External 1.2kb modem for DRSI PCPA-1 ??

From: ac448@rgfn.epcc.Edu (Roy E Gould)
Date: Thu, 7 Dec 95 07:49:07 MST
To: netsig@tapr.org
Message-ID: <9512071449.AA18835@rgfn.epcc.Edu>
Rendered body type: text/plain

>I'm looking for a 1200 bd modem for my DRSI PCPA-1's "disconnect header
>serial port". Normally, DRSI's 300 bd HF modem is plugged in there, but I'm

The way I solved this problem was to build up a modem using the
"World Chip" (I have forgotten what the part number is right now).
This chip does 1200 baud & 300 baud in several formats. For
1200 baud only you could use a TCM3105. I removed the RS-232
chips and put in jumpers so that I could use TTL levels between
the DRSI card and the modem. I connected up power to the
DRSI connector for the modem so that no external power supply
was needed. It works just fine.

Good luck & 73, Roy Gould N5RG

13. Re: [NETSIG:2251] Re: Suggestion on type of UHF Radio for backbone

From: jra@ag9v.ampr.org
Date: Thu, 7 Dec 1995 20:10:13 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199512080110.UAA08795@ag9v.ampr.org>
Rendered body type: text/plain

You (Richard Hallman) write:
>
> Also playingg around at 19.2 with the Mitrek.....Seems to be a
>wonderful and STABLE platform...

I'm also working at getting the Mitrek to do 19.2. What are you doing
about the IF bandwidth? I got a bunch of 110kHz ceramic 10.7MHz IF
filters that I'm trying to patch in (impedance matching being the big
problem). The 110kHz is twice as wide as necessary, but is all I could
find readily available.

I'm very interested in how you're tacking this...

73,
John

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

14. UHF Mitrek Problems at 9600!!!

From: <MITCHELL.T@ocf.compuserve.com>
Date: 07 Dec 95 11:15:55 EST
To: <netsig@tapr.org>
Message-ID: <OCF_3471-38348@CompuServe.COM>
Rendered body type: text/plain

*Message:
From: MITCHELL.T at CCPO.KCPO
Date: 12/7/95 9:53AM
To: INTERNET:netsig@tapr.org at OCF_INFORM
Subject: UHF Mitrek Problems at 9600!!!
Contents:

Text item: Text_1

Well Orv you were right on with the comments you forwarded about Motorola Mitreks running 9600 baud!

In Kansas City we are having major problems with the RX crystal oscillator getting into the transmitter exciter on 441.05 MHz. We have been getting really weird mixes that are about 60 dB down that trashes the ham band and sometimes out of band!!! It appears that a fairly common mix is 444.675 MHz and 444.525 MHz. This only occurs when the TX is up on the Mitrek.

One of the modifications that was made to the Mitrek for 9600 baud was disabling the RX mute, thereby keeping the RX hot during TX. This mod also decreases the TXDELAY needed on the network since the RX never has to wakeup ater being in transmit. This of course is why the RX oscillator gets into the exciter!

One solution, we are thinking of making, is to reverse the RX MUTE modification. This will probably make our TXDELAY go from 40-50 msec to maybe 200 msec. A major slowdown.

Another possible solution is to put a high-Q pass cavity tuned to 441.05 MHz between the antenna and the radio. This will not fix the problem, but may help in reducing the mix products that get emitted from the antenna.

Anyone have any ideas or had the same problem? I would sure like to find a fix for this problem!

I bet if you have modified a Mitrek for 9600 baud, and left the RX active, that you too have the same problem! You may want to check it out before someone else finds it.

Tim Mitchell, KA5RYF

15. Re: [NETSIG:2255] Re: External 1.2kb modem for DRSI PCPA-1 ??

From: "Tom Moulton" <tmoulton@ram.net>
Date: Thu, 07 Dec 95 12:13:48 EST
To: netsig@tapr.org
Message-ID: <15021573.20e2@ram.net>
Rendered body type: text/plain

It's the AMD7910

>
>>I'm looking for a 1200 bd modem for my DRSI PCPA-1's "disconnect header
>>serial port". Normally, DRSI's 300 bd HF modem is plugged in there, but I'm
>
>
>The way I solved this problem was to build up a modem using the
>"World Chip" (I have forgotten what the part number is right now).
>This chip does 1200 baud & 300 baud in several formats. For
>1200 baud only you could use a TCM3105. I removed the RS-232
>chips and put in jumpers so that I could use TTL levels between
>the DRSI card and the modem. I connected up power to the
>DRSI connector for the modem so that no external power supply
>was needed. It works just fine.
>
>Good luck & 73, Roy Gould N5RG
>

****
Thomas A. Moulton, W2VY
w2vy@ram.net

16. ASCOM 940 (TRX info)

From: ferracci@imaginet.fr (Laurent Ferracci - F1JKJ)
Date: Thu, 07 Dec 1995 19:30:22 GMT
To: netsig@tapr.org
Message-ID: <30c71a48.3077502@mail.imaginet.fr>
Rendered body type: text/plain

Hi,

Our local packet group is looking for info about ASCOM 940
transceivers.

These are professional units, running on programmed channels.

We are tying to get the shematics and programmation tips, as we have
the opportunity of buying 60 units at a low price...

If someone can help..
-- +-------------------------------+-----------------------------------+
-- | From Laurent FERRACCI, F1JKJ | > ferracci@imaginet.fr < |
-- | Montpellier, FRANCE | http://www.imaginet.fr/~ferracci |
-- +-------------------------------+-----------------------------------+
--
-- [PGP key on public-key servers]

17. Re: [NETSIG:2256] Re: Suggestion on type of UHF Radio for backbone

From: Richard Hallman <ki3v@connectus.com>
Date: Thu, 07 Dec 1995 09:55:14 pst
To: netsig@tapr.org
Message-ID: <30C72A88-00000001@rnodx.org>
Rendered body type: text/plain

>You (Richard Hallman) write:
>>
>> Also playingg around at 19.2 with the Mitrek.....Seems to be a
>>wonderful and STABLE platform...
>
>I'm also working at getting the Mitrek to do 19.2. What are you doing

Think I may have worded my sentence wrong......Ment to say the MITREK
is a wonderful platform and very stable at 9600. We also are playing
with the 110 khz filters but have the same problem as yourself. I also
found a company a while back that had 35 Khz 10.7 Mhz filters. Of
course they ran out and didnt have any intentions of building/buying
more, Unless I bought like 10,000 of them!! ha

  Anybody else out there playing with the 110 Khz 10.7 Mhz IF Filters
for the Mitrek??? Also for those who can burn the proms/encode the
freqs for the Motorola Syntor, These also work GREAT at UHF on 9600
with the same Mitrek mods.......I bought a bunch from a guy for $40
each/ 45 watt version.

See Ya!   Rich KI3V/7 Reno

****
Richard Hallman   ki3v@connectus.com
11870 Heartpine St
Reno Nv 89506   ki3v@w7ta.#nonev.nv
****

18. Re: [NETSIG:2258] Re: External 1.2kb modem for DRSI PCPA-1 ??

From: Charles Brabham <n5pvl@texoma.com>
Date: Fri, 8 Dec 1995 11:53:11 -0600
To: netsig@tapr.org
Message-ID: <199512081753.LAA18469@mercury.texoma.com>
Rendered body type: text/plain

At 10:37 AM 12/8/95 -0600, you wrote:
>It's the AMD7910
>
>>
>>>I'm looking for a 1200 bd modem for my DRSI PCPA-1's "disconnect header
>>>serial port". Normally, DRSI's 300 bd HF modem is plugged in there, but I'm
>>
>>
>>The way I solved this problem was to build up a modem using the
>>"World Chip" (I have forgotten what the part number is right now).
>>This chip does 1200 baud & 300 baud in several formats. For

>>1200 baud only you could use a TCM3105. I removed the RS-232
>>chips and put in jumpers so that I could use TTL levels between
>>the DRSI card and the modem. I connected up power to the
>>DRSI connector for the modem so that no external power supply
>>was needed. It works just fine.

I appreciate the response and info, guys, but I'm kind of an appliance
operator.. A VOM, an SWR bridge, and a deviation meter are about the most
complicated test equipment I can handle. I can put together a kit and set it
up, as long as you don't have to know how to use a 'scope to do so.
Your comments will be useful for other guys here on the SIG, but I need
something that comes with instructions which I can always refer to as a last
resort. (:-)

I'm looking mainly for something fairly easy to get set up and running.

Thanks!

73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
Internet: n5pvl@texoma.com

Blow, ye winds
 Like the trumpet blows
But without all that noise.

19. Re: [NETSIG:2257] UHF Mitrek Problems at 9600!!!

From: Richard Hallman <ki3v@connectus.com>
Date: Fri, 08 Dec 1995 05:43:48 pst
To: netsig@tapr.org
Message-ID: <30C8411C-00000001@rnodx.org>
Rendered body type: text/plain

>
>*Message:
>From: MITCHELL.T at CCPO.KCPO
>Date: 12/7/95 9:53AM
>To: INTERNET:netsig@tapr.org at OCF_INFORM
>Subject: UHF Mitrek Problems at 9600!!!
>Contents:
>
>Text item: Text_1
>
>   Well Orv you were right on with the comments you forwarded about
>   Motorola Mitreks running 9600 baud!
>
>   In Kansas City we are having major problems with the RX crystal
>   oscillator getting into the transmitter exciter on 441.05 MHz.
We
>   have been getting really weird mixes that are about 60 dB down
that
>   trashes the ham band and sometimes out of band!!! It appears
that a
>   fairly common mix is 444.675 MHz and 444.525 MHz. This only
occurs
>   when the TX is up on the Mitrek.
>
>   One of the modifications that was made to the Mitrek for 9600
baud was
>   disabling the RX mute, thereby keeping the RX hot during TX. This
mod
>   also decreases the TXDELAY needed on the network since the RX
never
>   has to wakeup ater being in transmit. This of course is why the
RX
>   oscillator gets into the exciter!
>
>   One solution, we are thinking of making, is to reverse the RX
MUTE
>   modification. This will probably make our TXDELAY go from 40-50
msec
>   to maybe 200 msec. A major slowdown.
>
>   Another possible solution is to put a high-Q pass cavity tuned to

>   441.05 MHz between the antenna and the radio. This will not fix
the
>   problem, but may help in reducing the mix products that get
emitted

>   from the antenna.
>
>   Anyone have any ideas or had the same problem? I would sure like
to
>   find a fix for this problem!
>
>   I bet if you have modified a Mitrek for 9600 baud, and left the
RX
>   active, that you too have the same problem! You may want to
check it
>   out before someone else finds it.
>
>   Tim Mitchell, KA5RYF
>
>

I havent seen this problem with any of the Mitreks I have Mod'ed.
I will try and confirm this on our Spec Analyzer on the freqs you
mentioned.   Several sites we have lotsa 440 repeaters and havent heard
of any complaints.   But will check this anyway and look for a fix
before the complaints start if its there.

  Thanks for the info!!

  Rich KI3V/7   Reno

****
Richard Hallman   ki3v@connectus.com
11870 Heartpine St
Reno Nv 89506   ki3v@w7ta.#nonev.nv
****

20. RE: [NETSIG:2260] Re: Suggestion on type of UHF Radio for backbone

From: Ron Curry <recurry@insighttec.com.ke6wed.ampr.org>
Date: Fri, 8 Dec 1995 21:06:23 -0800
To: "netsig@tapr.org" <netsig@tapr.org>
Message-ID: <01BAC5B1.0876DA00@yankee.insighttec.com>
Rendered body type: text/plain

Using 110khz wide filters likely won't work very well except in absolutely
optimal path conditions. The S/N will be just terrible considering you
really only need about 30khz or so.

Ron ke6wed

From: Richard Hallman[SMTP:ki3v@connectus.com]
Sent: Friday, December 08, 1995 2:43 AM
To: netsig@tapr.org
Subject: [NETSIG:2260] Re: Suggestion on type of UHF Radio for backbone

>You (Richard Hallman) write:
>>
>> Also playingg around at 19.2 with the Mitrek.....Seems to be a
>>wonderful and STABLE platform...
>
>I'm also working at getting the Mitrek to do 19.2. What are you doing

Think I may have worded my sentence wrong......Ment to say the MITREK
is a wonderful platform and very stable at 9600. We also are playing
with the 110 khz filters but have the same problem as yourself. I also
found a company a while back that had 35 Khz 10.7 Mhz filters. Of
course they ran out and didnt have any intentions of building/buying
more, Unless I bought like 10,000 of them!! ha

  Anybody else out there playing with the 110 Khz 10.7 Mhz IF Filters
for the Mitrek??? Also for those who can burn the proms/encode the
freqs for the Motorola Syntor, These also work GREAT at UHF on 9600
with the same Mitrek mods.......I bought a bunch from a guy for $40
each/ 45 watt version.

See Ya!   Rich KI3V/7 Reno

****
Richard Hallman   ki3v@connectus.com
11870 Heartpine St
Reno Nv 89506   ki3v@w7ta.#nonev.nv

****

21. Re: [NETSIG:2252] External 1.2kb modem for DRSI PCPA-1 ??

From: Steve Stroh <strohs@halcyon.com>
Date: Sat, 9 Dec 1995 18:25:18 -0800 (PST)
To: netsig@tapr.org
Message-ID: <Pine.ULT.3.91.951209182203.1713B-100000@coho.halcyon.com>
Rendered body type: text/plain

On Wed, 6 Dec 1995, Charles Brabham wrote:

> I'm looking for a 1200 bd modem for my DRSI PCPA-1's "disconnect header
> serial port". Normally, DRSI's 300 bd HF modem is plugged in there, but I'm
> no longer involved in HF packet.
>
> The disconnect header port sends synchronous data in AX.25 format to an
> external modem, and can be configured for RS-232 or TTL levels. Here are
> some of the external modems DRSI sez have been interfaced to the port:
>
> G3RUH 9600 modem   TexNet 9600 modem   HAL ST-7000 HF modem
>
> GLB NetLink 19,.2 kb modem   Kantronics 2400 modem   DRSI 2400 modem
>
>
> As you can see, none of these will do you much good for 1200 bd. I have a
> TAPR 9600 modem which will also interface with the PCPA-1, but unfortunately
> there is no local 9600 activity yet, and a lowly 1200 bd modem would be much
> more useful to me at this time.

I suspect the Kantronics 2400 modem is the Kantronics 2400 baud modem for
the Data Engine. If so, Kantronics makes a family of these modems with
the same form factor (pinout) for the Data Engine (they did- I have no
idea if they still manufacture them all). They came in 1200, 2400, 9600,
and 19,200.

PacComm is also making modems for the DE form factor for their new
"Gracilis" PackeTwin and PackeTen.

> I suspect that since the TexNet 9600 modem works OK, that the TexNet 1200
> modem kit might be a good way to go.. Has anyone on the list tried this
> previously, or have any good info related to the TexNet 1200 modem?
>
> I have also heard that DRSI's 300 bd HF modem can be converted for 1200 bd
> operation.. If anyone has info on that conversion, that would be great !
> All I've been able to dig up is rumours, and no specific info as yet.
>
> I'd like to hear from anyone who has found a good way to run 1200 bd on the
> PCPA-1's external modem port, by whatever means..
>
> Thanks!
>
>
> 73 DE N5PVL @ N5PVL.#NTX.TX.USA.NOAM
> Internet: n5pvl@texoma.com
>
> Blow, ye winds
> Like the trumpet blows
> But without all that noise.

Steve N8GNJ

--
Steve Stroh N8GNJ   strohs@halcyon.com
Amateur Radio TCP/IP n8gnj@sw.n8gnj.ampr.org

22. Re: [NETSIG:2263] Re: Suggestion on type of UHF Radio for backbone

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Sun, 10 Dec 1995 06:07:35 -0700
To: netsig@tapr.org
Message-ID: <199512101307.GAA00389@acca.nmsu.edu>
Rendered body type: text/plain

Disagree! The noise power goes up with the square root of the
bandwidth. So the larger filter is a small natural noise loss. A bigger
problem is man-made noise and this could be a problem on a busy radio hill.

Karl

At 08:24 PM 12/9/95 -0600, you wrote:
>Using 110khz wide filters likely won't work very well except in absolutely
>optimal path conditions. The S/N will be just terrible considering you
>really only need about 30khz or so.
>
>Ron ke6wed
>
>----------
>From: Richard Hallman[SMTP:ki3v@connectus.com]
>Sent: Friday, December 08, 1995 2:43 AM
>To: netsig@tapr.org
>Subject: [NETSIG:2260] Re: Suggestion on type of UHF Radio for backbone
>
>>You (Richard Hallman) write:
>>>
>>> Also playingg around at 19.2 with the Mitrek.....Seems to be a
>>>wonderful and STABLE platform...
>>
>>I'm also working at getting the Mitrek to do 19.2. What are you doing
>
>Think I may have worded my sentence wrong......Ment to say the MITREK
>is a wonderful platform and very stable at 9600. We also are playing
>with the 110 khz filters but have the same problem as yourself. I also
>found a company a while back that had 35 Khz 10.7 Mhz filters. Of
>course they ran out and didnt have any intentions of building/buying
>more, Unless I bought like 10,000 of them!! ha
>
> Anybody else out there playing with the 110 Khz 10.7 Mhz IF Filters
>for the Mitrek??? Also for those who can burn the proms/encode the
>

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

23. Re: [NETSIG:2263] Re: Suggestion on type of UHF Radio for backbone

From: jra@ag9v.ampr.org
Date: Sun, 10 Dec 1995 09:55:49 -0500 (EST)
To: netsig@tapr.org
Message-ID: <199512101455.JAA02507@ag9v.ampr.org>
Rendered body type: text/plain

The 19.2 waveform we're working with is the Kantronics D4-10, which is a
bit broader (+/-10kHz FSK). The Kantronics radios use a 60kHz filter, so
we're only twice as wide as needed :-(.

I'm still hoping to find some more suitable filters, but for now the 110kHz
gives us a starting point. Alternatively, we may find we can run the system
out to 28.8 or 38.4 (and still stay within the FCC bandwidth limitation).

John

You (Ron Curry) write:
>
>Using 110khz wide filters likely won't work very well except in absolutely
>optimal path conditions. The S/N will be just terrible considering you
>really only need about 30khz or so.
>
>Ron ke6wed
>
>----------
>From: Richard Hallman[SMTP:ki3v@connectus.com]
>Sent: Friday, December 08, 1995 2:43 AM
>To: netsig@tapr.org
>Subject: [NETSIG:2260] Re: Suggestion on type of UHF Radio for backbone
>
>>You (Richard Hallman) write:
>>>
>>> Also playingg around at 19.2 with the Mitrek.....Seems to be a
>>>wonderful and STABLE platform...
>>
>>I'm also working at getting the Mitrek to do 19.2. What are you doing
>
>Think I may have worded my sentence wrong......Ment to say the MITREK
>is a wonderful platform and very stable at 9600. We also are playing
>with the 110 khz filters but have the same problem as yourself. I also
>found a company a while back that had 35 Khz 10.7 Mhz filters. Of
>course they ran out and didnt have any intentions of building/buying
>more, Unless I bought like 10,000 of them!! ha

>
> Anybody else out there playing with the 110 Khz 10.7 Mhz IF Filters
>for the Mitrek??? Also for those who can burn the proms/encode the
>freqs for the Motorola Syntor, These also work GREAT at UHF on 9600
>with the same Mitrek mods.......I bought a bunch from a guy for $40
>each/ 45 watt version.
>
>See Ya!   Rich KI3V/7 Reno
>
>**
>Richard Hallman   ki3v@connectus.com
>11870 Heartpine St
>Reno Nv 89506   ki3v@w7ta.#nonev.nv
>**
>
>
>
>

--
John Ackermann   AG9V
Internet: jra@ag9v.ampr.org
Packet: AG9V@N8ACV.#DAY.OH.USA

24. RE: [NETSIG:2265] Re: Suggestion on type of UHF Radio for

From: Ron Curry <recurry@insighttec.com.ke6wed.ampr.org>
Date: Sun, 10 Dec 1995 09:46:24 -0800
To: "netsig@tapr.org" <netsig@tapr.org>
Message-ID: <01BAC6E4.5EE02160@yankee.insighttec.com>
Rendered body type: text/plain

Karl,
Well maybe I articulated incorrectly but it seems you said basically what I
assumed. As you make the filters wider the amount of noise in ratio to the
useful signal becomes greater.

As an example, I have a Kantronics D4-10 data radio which has switch
selectable narrow (for 9600) or wide (for 19200) filtering. With excellant
point to point links of a few miles it makes no difference which filters
are enabled (although on the scope you can see it). On the 40 mile link I
have with another station it stops working when you switch the broad filter
in. Seen on the scope the modem waveform becomes very noisy.

I'm not an expert here but it seems like there is good reason to filter out
noise which is outside the bandwidth of the signal you are interested in.

Ron

From: Karl F. Larsen[SMTP:k5di@acca.nmsu.edu]
Sent: Sunday, December 10, 1995 2:29 AM
To: netsig@tapr.org
Subject: [NETSIG:2265] Re: Suggestion on type of UHF Radio for

        Disagree! The noise power goes up with the square root of the
bandwidth. So the larger filter is a small natural noise loss. A bigger
problem is man-made noise and this could be a problem on a busy radio hill.

        Karl

At 08:24 PM 12/9/95 -0600, you wrote:
>Using 110khz wide filters likely won't work very well except in absolutely
>optimal path conditions. The S/N will be just terrible considering you
>really only need about 30khz or so.
>
>Ron ke6wed
>
>----------
>From: Richard Hallman[SMTP:ki3v@connectus.com]
>Sent: Friday, December 08, 1995 2:43 AM
>To: netsig@tapr.org
>Subject: [NETSIG:2260] Re: Suggestion on type of UHF Radio for backbone
>

>>You (Richard Hallman) write:
>>>
>>> Also playingg around at 19.2 with the Mitrek.....Seems to be a
>>>wonderful and STABLE platform...
>>
>>I'm also working at getting the Mitrek to do 19.2. What are you doing
>
>Think I may have worded my sentence wrong......Ment to say the MITREK
>is a wonderful platform and very stable at 9600. We also are playing
>with the 110 khz filters but have the same problem as yourself. I also
>found a company a while back that had 35 Khz 10.7 Mhz filters. Of
>course they ran out and didnt have any intentions of building/buying
>more, Unless I bought like 10,000 of them!! ha
>
> Anybody else out there playing with the 110 Khz 10.7 Mhz IF Filters
>for the Mitrek??? Also for those who can burn the proms/encode the
>

Karl F. Larsen -------------- k5di@acca.nmsu.edu
---------------------------->

25. Re: [NETSIG:2265] Re: Suggestion on type of UHF Radio for

From: "Bob Nielsen" <nielsen@primenet.com>
Date: Sun, 10 Dec 1995 11:49:14 +0700
To: "Karl F. Larsen" <k5di@acca.nmsu.edu>, netsig@tapr.org
Message-ID: <199512101849.LAA21180@usr2.primenet.com>
Rendered body type: text/plain

> Date: Sun, 10 Dec 1995 10:29:32 -0600 (CST)
> Reply-to: netsig@tapr.org
> From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
> To: netsig@tapr.org
> Subject: [NETSIG:2265] Re: Suggestion on type of UHF Radio for

>   Disagree! The noise power goes up with the square root of the
> bandwidth. So the larger filter is a small natural noise loss. A bigger
> problem is man-made noise and this could be a problem on a busy radio hill.

Wrong! Noise power = kTB, where k = Boltzmann's constant, which is
in units of ergs/deg. No square root.

Bob

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                               AX.25: w6swe@wb7tls.az.usa.noam

26. Re: [NETSIG:2257] UHF Mitrek Problems at 9600!!!

From: mel@mo.net (Mel Whitten)
Date: Sun, 10 Dec 1995 20:57:48 -0600
To: netsig@tapr.org
Message-ID: <199512110301.VAA22381@Walden.MO.NET>
Rendered body type: text/plain

Tim,
Try a .01 ceramic (short leads) across the channel element pins 1 & 3.
..and I don't think you will see a noticeable difference in TXdelay
if you remove the jumper across Q1's emmiter to collector
(RX sw transistor) that keeps the 9.5v on the rx.
Mel, k0pfx

>
>*Message:
>From: MITCHELL.T at CCPO.KCPO
>Date: 12/7/95 9:53AM
>To: INTERNET:netsig@tapr.org at OCF_INFORM
>Subject: UHF Mitrek Problems at 9600!!!
>Contents:
>
>Text item: Text_1
>
>   Well Orv you were right on with the comments you forwarded about
>   Motorola Mitreks running 9600 baud!
>
>   In Kansas City we are having major problems with the RX crystal
>   oscillator getting into the transmitter exciter on 441.05 MHz. We
>   have been getting really weird mixes that are about 60 dB down that
>   trashes the ham band and sometimes out of band!!! It appears that a
>   fairly common mix is 444.675 MHz and 444.525 MHz. This only occurs

> when the TX is up on the Mitrek.
>
> One of the modifications that was made to the Mitrek for 9600 baud was
> disabling the RX mute, thereby keeping the RX hot during TX. This mod
> also decreases the TXDELAY needed on the network since the RX never
> has to wakeup ater being in transmit. This of course is why the RX
> oscillator gets into the exciter!
>
> One solution, we are thinking of making, is to reverse the RX MUTE
> modification. This will probably make our TXDELAY go from 40-50 msec
> to maybe 200 msec. A major slowdown.
>
> Another possible solution is to put a high-Q pass cavity tuned to
> 441.05 MHz between the antenna and the radio. This will not fix the
> problem, but may help in reducing the mix products that get emitted
> from the antenna.
>
> Anyone have any ideas or had the same problem? I would sure like to
> find a fix for this problem!
>
> I bet if you have modified a Mitrek for 9600 baud, and left the RX
> active, that you too have the same problem! You may want to check it
> out before someone else finds it.
>
> Tim Mitchell, KA5RYF
>
>
>
>
Mel Whitten, K0PFX

27. Re: MITREK problems...

From: wb9mjn@n0eir.ampr.org
Date: Sun, 10 Dec 95 12:53:07 CST
To: netsig@tapr.org
Message-ID: <1443@n0eir.ampr.org>
Rendered body type: text/plain

Message-Id: 1443_n0eir
From: wb9mjn@n0eir.#stl.mo.usa.noam
To: netsig@tapr.org

Hi,
One of the big problems with surplus MITREKS, probably why they are available cheaply in the first place, is the Helical Resonator Receiver Filter. With vibration, this filter does not filter, or becomes lossy, or both. This is due to the solder joints between the diecastings, and circuit board usually.

Is it possible that the 60 dB down spurs (-60 dBc spurs is legal by the way) are caused by defective Reciever filtering? Is it possible the Exciter filter is not working? Either one of these filters being defective, could cause the spurious problem, if when defective, they were tuned for acceptable performance. The result being a much broader passband than designed.

Lets remember some basic radio here. Why do radios have preamps or front end filters at all? Why not hook the antenna right into the mixer? Well, its illegal for one reason. What does law have to do with it? The FCC has rules to prevent receiver LO s from radiating. The Mitrek LO is on the order of 10 to 100 mw! That s allot a power for a LO! The reason for that power is to get supperior strong signal rejection, in the first mixer. Additionally, the LO is only 21.4 (2 times the IF freq) Mhz away from 440 Mhz. Thus, the filtering needs to be very good, since this is only a 5 % difference in frequency between the rx freq, and the LO drive!

60 dB down spurs are possible due to the mechamism reported by the KA5 station, but he has not proven it. Leakage past the receiver filter, and into the T/R switch could result in these problems. The Tx exciter filter being defective could result in the spurs, too. To test for the Rx filter problem, the Rx lead from the T/R switch should be pulled, and see what effect it has on the spurs. To test the Tx exciter filter, it needs to be swept. Flexing all the solder joints, to the diecasting, while observing the spectrum would be a good idea too. If the spurs drop, the problem is due to a defective radio, not a defective modification.

73, Don. wb9mjn@n0eir.ampr.org

28. Re: [NETSIG:2263] Re: Suggestion on type of UHF Radio for backbone

From: Fred Quarles <fredq@bihs.net>
Date: Sun, 10 Dec 1995 23:05:52 -0600 (CST)
To: netsig@tapr.org
Message-ID: <199512110505.XAA10388@brazos.bihs.net>
Rendered body type: text/plain

Also for those who can burn the proms/encode the
>freqs for the Motorola Syntor, These also work GREAT at UHF on 9600
>with the same Mitrek mods.......I bought a bunch from a guy for $40
>each/ 45 watt version.
>
>See Ya!   Rich KI3V/7 Reno
Hi Rich, what does it take to burn the syntor proms, a special motorola
device or will a regular eprom programmer work? Never had any experience
with Motorola radio but like what I see and would like to select the right
ones to work with.
 Thanks...73...FredQ, KC5HHN

29. Re: [NETSIG:2257] UHF Mitrek Problems at 9600!!!

From: mark@tetherless.com (Mark Oppenheim)
Date: Sun, 10 Dec 1995 23:45:04 -0800
To: netsig@tapr.org, netsig@tapr.org
Message-ID: <199512110745.XAA26739@gorgor.pa.tetherless.com>
Rendered body type: text/plain

At 10:33 AM 12/8/95 -0600, MITCHELL.T@ocf.compuserve.com wrote:

<Stuff Snipped>
>   In Kansas City we are having major problems with the RX crystal
>   oscillator getting into the transmitter exciter on 441.05 MHz. We
>   have been getting really weird mixes that are about 60 dB down that
>   trashes the ham band and sometimes out of band!!! It appears that a
>   fairly common mix is 444.675 MHz and 444.525 MHz. This only occurs
>   when the TX is up on the Mitrek.
<More stuff snipped>

A question: who made your xtals for the Mitrek, and did they check the xtals
in the elements? I have a repeater on 440 MHz and haven't seen the problems
being described - either "on the air" or with a spectrum analyzer.

Mark
KD6KQ

30. Re: [NETSIG:2267] Re: Suggestion on type of UHF Radio for

From: "John M. Wilcox" <0005018901@mcimail.com>
Date: Mon, 11 Dec 95 03:42 EST
To: netsig <netsig@tapr.org>
Message-ID: <71951211084217/0005018901PK3EM@MCIMAIL.COM>
Rendered body type: text/plain

I have been curious lately about modem performance, both 1200 and 9600
baud. Can someone enlighten me on the method used to check "eye" patterns
on the tnc? I don't know where to look or what to expect on good, poor and
'forget it' signals. Come on, Elmer, give some of that knowledge away!
Thanks and replies to me direct or the list will be most appreciated. It
just could be that I am not the only one who could benefit from this
information...

5018901@mcimail.com

73 de John/NS1Z

-------- REPLY, Original message follows --------
> Karl,
> Well maybe I articulated incorrectly but it seems you said basically what
> I
> assumed. As you make the filters wider the amount of noise in ratio to
the
> useful signal becomes greater.
-------- REPLY, End of original message --------

31. Re: [NETSIG:2267] Re: Suggestion on type of UHF Radio for

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 11 Dec 1995 06:36:36 -0700
To: netsig@tapr.org
Message-ID: <199512111336.GAA12722@acca.nmsu.edu>
Rendered body type: text/plain

At 06:06 PM 12/10/95 -0600, you wrote:
>Karl,
>Well maybe I articulated incorrectly but it seems you said basically what I
>assumed. As you make the filters wider the amount of noise in ratio to the
>useful signal becomes greater.
>
        Yes this is exactly what happens. And the ONLY thing that is
important is the Signal-to-Noise Ratio.

>As an example, I have a Kantronics D4-10 data radio which has switch
>selectable narrow (for 9600) or wide (for 19200) filtering. With excellant
>point to point links of a few miles it makes no difference which filters
>are enabled (although on the scope you can see it). On the 40 mile link I
>have with another station it stops working when you switch the broad filter
>in. Seen on the scope the modem waveform becomes very noisy.

        I am surprised you have such a poor signal over just a 40 mile path.
Sounds like you have something in the way. I have a 40 mile path to El Paso
and have had a 9600 baud path for going on 4 years now. It is TEKK to TEKK
radios both running 2 watts.

        Would like to know how much wider that radio is in the broad mode? I
think wa5pie has one of those radios. I will see Rick.

>
>I'm not an expert here but it seems like there is good reason to filter out
>noise which is outside the bandwidth of the signal you are interested in.
>
>Ron
>
        No question and if kTB is the only factor controlling noise into a
receiver then if you double the bandwidth you double the noise. Now if you
have a real hot receiver front end, ie: if T is high, then your letting in
twice as much "local noise" and that is a lot; ruins your S/N fast.

        I would try a borrowed low noise pre-amp and run that test again
over 40 miles.

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

32. Re: [NETSIG:2256] Re: Suggestion on type of UHF Radio for backbone

From: Chuck Hast <wchast@utilpart.com>
Date: Mon, 11 Dec 1995 18:04:57 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9512111734.B22319-0100000@tma1.noname>
Rendered body type: text/plain

I am looking at the Mitrek low band radio, (I am working with some of
these commercially doing 9k6) and as to 19k2, I think you need to look at
about a 30khz set of quartz filters such as those that PacComm sells for
the TEKK radios. They need to be 10.7mhz rather than the 21.4mhz units
used for the TEKK.

Seems as though I remember seeing some crystals in one of the parts house
catalogs that will work well. I think it was Digi-key.

110khz is way too wide for 19k2, especially if you are using the RUH and
TAPR type boards as they only need about 30khz at 19k2.

On the lowband unit I do not see ceramic filters so you will not need those.

If you are using a radio that needs ceramic filters, and the Murata filters
will work you can use the CFG or CFH (I think that was the prefixes) 455C
filters, if you need a bit more bandwidth for drifting radios then use the
455B which is even wider.

By way the Mitrek low band radios make great 9k6 radios for 6m (highest speed
for that band). I am looking forward to getting two of them to move to the
6m band.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:Costa Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
mundo de la computacion a todo el planeta.

Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

33. Re: [NETSIG:2245] Need maxar/9600 info

From: Chuck Hast <wchast@utilpart.com>
Date: Mon, 11 Dec 1995 18:10:49 -0500 (EST)
To: netsig@tapr.org
Message-ID: <Pine.3.89.9512111842.D22319-0100000@tma1.noname>
Rendered body type: text/plain

Bob, the guys over in Palm Beach have several of those radios running at
9k6. I did some mods many moons ago on them in order to make them run
9k6. Found that the only real problem we ran into was the fact that the
TXAudio modulates the oscillator bias for both RX and TX we had to turn
TXaudio off during RX, but most all 9k6 modems provide that now.

We used the PacComm version of the G3RUH modem. Little radio does quite
well provided you keep that bias stable. I think that the guys over there
ran into a problem with one of the ROSE network links due to the bias
changing with temperature, once stablized it worked just fine.

   Chuck Hast   e-mail wchast@gateway.utilpart.com

HAST CONSULTING Tampa FL.:
Using radio for what it does best, Data Communications.

Grupo Datapac Ltda:Costa Rica :
Aplicando la radio al mundo de la comunicacion digital, extendiendo el
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Running OS/2 WARP and LINUX on these boxes.

Amateur Packet radio e-mail kp4djt@kp4djt.#tpa.fl.usa.noam
Ampr.org kp4djt.ampr.org
AX.121 3100813077
---

34. FW: RE: Amp for Tekk Micro??

From: bobsmith@mail.i2020.net (Robert L. Smith)
Date: Mon, 11 Dec 95 08:37:35 EST
To: netsig@tapr.org
Message-ID: <Chameleon.951211083930.bobsmith@i2020.net>
Rendered body type: text/plain

I originally sent this as reply to n1uoc via the nos-bbs group. It occurred
to me that some netsig folks might be interested also.

>
>>Hello all,
>>
>>I have just started using the Tekk Micro and wishing that I had a litte more
>>transmitter power. I am searching for a HomeBrew amplifier. Plans or a
>>magizine
>>reference would be a great start. To all who reply, thanks in advance.
>>
>>73 de Chris
>>N1UOC
>>
>
>Hi Chris --
>

>My opinion is that you would be generally better off to invest your time and money in
>antenna improvements than trying to throw power at the problem in the UHF band.
>
>PATHCALC shows 30-40 db fade margins for paths out to 30-40 miles with modest
>antennas and decent feed lines when using the two watt Micro. We have one
thirty-five
>mile path in our network and our results seem to be pretty consistent with PATHCALC
>projections. (This path is running marginal antenna height so that the radio path is
>grazing the surface at the midpoint at 4/3 earth radius)
>
>(A version of PATHCALC is included with the The-Net 2.10 materials)
>
>My experience has been that while the combination of power and some favorable
>ducting will blast through in some cases at VHF; UHF paths don't seem to respond as
>well to the heavy handed approach.
>
>My local formula for reliable operation includes:
>
>1. Make certain the radios are on frequency. The IF filter in the Micro is not excessively
>wide. (Watching the DC component out of the discriminator makes a good tuning
>indicator/monitor).
>
>2. Verify proper eye-pattern aligment at the bit slicer. There isn't much to adjust on
the
>g3ruh modems but a poor pattern is a tipoff as to problems elsewhere and must be
>corrected before you can expect good circuit reliability.
>
>I have found that achieving a good pattern with DPK-9600 modems is tricky and
>generally requires a scope to accomplish.
>
>3. A good, low-loss feed line is essential. Hard line is preferred for long runs, I have
>had good luck with 9913 also. Take a look at the loss factors and plug them in your
>PATHCALC analysis.
>
>4. We mostly use modest side-mount beams (3 - 12 elements), but the antenna at
>our central bbs server is worth mentioning. It is a commercial VHF (yes, VHF) stacked
>dipole array consisting of four, folded diploles and a phasing harness which was
>installed to handle our VHF packet port on 144.93. I found that I could excite it on the
>third harmonic with our 441.050 Tnet Micro and so we now combine both the VHF and
>UHF ports through one of those simple dual-band duplexors normally used to drive
dual
>band verticals. (I think ours is made by Diamond) This antenna is at one end of the 35
>mile path I mentioned above.
>
>I tried this trick with my vertical stacked co-linear at home and no luck!   Maybe
someone
> who understands antennas better than I do can explain further.
>
>As an aside, I have seen recent notes that some of the popular dual band verticals
have
>really terrible radiation patterns at UHF. Sorry, I don't remember where I saw that,
>maybe some one else can bring us up to date.
>
> 73 es happy holidays
>
>   -----------------
> Robert L. (Bob) Smith   804/745-1065   bobsmith@i2020.net
> Smith Machine Works, Inc.   wa4ypv@w4za.ampr.org
>
>

  Robert L. Smith   804/745-1065   bobsmith@i2020.net
  Smith Machine Works, Inc.   wa4ypv@w4za.ampr.org

35. Re: Modem Eye How? (was :Suggestion..)

From: shawnpat@sierra.net
Date: Wed, 13 Dec 1995 00:57:38 +0000
To: netsig@tapr.org
Message-ID: <199512130103.AA27724@diamond.sierra.net>
Rendered body type: text/plain

At 10:23 AM 12/12/95 -0600, you wrote:
>I have been curious lately about modem performance, both 1200 and 9600
>baud. Can someone enlighten me on the method used to check "eye" patterns
>on the tnc? I don't know where to look or what to expect on good, poor and
>'forget it' signals. Come on, Elmer, give some of that knowledge away!

The ARRL book "Packet: Speed, More Speed and Applications" has the

information your asking for. If there any other helpers from the
folks who have been doing 9K6 (or faster) I would welcome those comments
also.

73 de Shawn, N7XBM.

36. PK-96 X1J node

From: "Charles Brabham" <n5pvl@texoma.com>
Date: Thu, 14 Dec 1995 11:01:12 +0000
To: netsig@tapr.org
Message-ID: <199512141701.LAA12838@mercury.texoma.com>
Rendered body type: text/plain

I'm currently thinking of setting up my AEA PK-96 as an X1J node, and
would like some general info about running an X1J node along with my
BPQ switch. The docs have left me a bit unclear about what to expect.

What I'm wondering is how I can hook up the X1J to the BPQ switch via
an RS-232 line.. In BPQCFG.TXT in the link's PORT def, do you set it
up as a NETROM port in order for the switch to talk to the X1J node,
for example?

At present, only one X1J node is to be interfaced to the BPQ switch,
so I assume I can take on the diode matrix project later on. Hope so,
at least! It looks complicated at first glance.

I'd also appreciate any hints 'n kinks from other hams who have used
the PK-96 for this purpose. All my experience so far has been with
'BPQ, so I don't know much about X1J node.

Thanks!

73 DE Charles N5PVL @ N5PVL.#NTX.TX.USA.NOAM

If it works, don't fix it.

37. Re: [NETSIG:2279] PK-96 X1J node

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 15 Dec 1995 12:45:19 -0700
To: netsig@tapr.org
Message-ID: <199512151945.MAA05829@acca.nmsu.edu>
Rendered body type: text/plain

At 10:45 AM 12/15/95 -0600, you wrote:
>I'm currently thinking of setting up my AEA PK-96 as an X1J node, and
>would like some general info about running an X1J node along with my
>BPQ switch. The docs have left me a bit unclear about what to expect.
>
        The best way to hook a x1j tnc to BPQ is to configure the X1J rs-232
port as a KISS port. Then you make BPQ look for a KISS tnc.

        As for AEA tnc's, I learned 6 years ago to use ANYTHING else. But I
do know that unless the PK-96 is a tnc-2 clone, forget X1J.

-karl

Karl F. Larsen -------------- k5di@acca.nmsu.edu ---------------------------->

38. Re: 150-174 Micors

From: ve2nrn@ve2noq.ampr.org
Date: Fri, 15 Dec 95 18:32:12 EDT
To: netsig@tapr.org
Message-ID: <144951@ve2noq.ampr.org>
Rendered body type: text/plain

The PA on the micor is broadband enough to put out it's rated output. The
transmitters on our nodes are not modified and are running at rated output.
73 de randy
ve2nrn@ve2noq.ampr.org
randyn@lino.com

39. Re: [NETSIG:2280] Re: PK-96 X1J node

From: "Charles Brabham" <n5pvl@texoma.com>
Date: Sat, 16 Dec 1995 10:16:50 +0000
To: netsig@tapr.org
Message-ID: <199512161616.KAA04621@mercury.texoma.com>
Rendered body type: text/plain

According to Karl..

> The best way to hook a x1j tnc to BPQ is to configure the X1J rs-232
> port as a KISS port. Then you make BPQ look for a KISS tnc.
>
Thanks, Karl! That's just the info I was looking for.

> As for AEA tnc's, I learned 6 years ago to use ANYTHING else. But I
> do know that unless the PK-96 is a tnc-2 clone, forget X1J.

I understand how you feel.. AEA TNC's are excellent for most packet
ops, but is less than delightful to use for a BBS or node, due to
thier non-TNC2 nature. Years ago I traded off all my AEA TNC's in
order to buy DRSI cards for my BBS, but since then I've ended up
checking out the PK-96 and PK-12 for my personal station and as
backup TNC's for the Node/BBS.

Even though the PK-96 isn't TNC2 compatable, a special version of
X1J4 has been written specifically for the PK-96. It lacks the
capability to run the deviation meter, sig strength meter, ect, but
has all the regular X1J node functions.

73 DE Charles N5PVL @ N5PVL.#NTX.TX.USA.NOAM

If it works, don't fix it.

40. FW: G.E. Pheonix es 9600 help???

From: bobsmith@mail.i2020.net (Robert L. Smith)
Date: Sat, 16 Dec 95 14:13:37 EST
To: netsig@tapr.org
Message-ID: <Chameleon.951216141507.bobsmith@i2020.net>
Rendered body type: text/plain

First, my many thanks to those who supplied info on Motorola Maxar
9600 bps mods.

I now have yet another user who has volunteered to extend our local 440mhz
backbone in another direction and has announced reciept of some
General Electric Pheonix radios capable of 440-450 operation.

Would love to hear from any user who has successfully modified these radios
for operation in amateur uhf/9600/g3ruh style service. Also need pointers to
sources of manuals, parts etc.

Again many thanks to all and best of happy holidays.

  Robert L. Smith   804/745-1065   bobsmith@i2020.net
  Smith Machine Works, Inc.   wa4ypv@w4za.ampr.org

41. Re: [NETSIG:2280] Re: PK-96 X1J node

From: mcduffie@hannibal.wncc.cc.ne.us (Gary McDuffie, Sr.)
Date: Sun, 17 Dec 1995 08:48:11 GMT
To: netsig@tapr.org
Message-ID: <30d370c8.33338211@hannibal.wncc.cc.ne.us>
Rendered body type: text/plain

On Sat, 16 Dec 1995 06:17:06 -0600 (CST), you wrote:

> At 10:45 AM 12/15/95 -0600, you wrote:
> >I'm currently thinking of setting up my AEA PK-96 as an X1J node, and
> >would like some general info about running an X1J node along with my
> >BPQ switch. The docs have left me a bit unclear about what to expect.
> >
>   The best way to hook a x1j tnc to BPQ is to configure the X1J rs-232
> port as a KISS port. Then you make BPQ look for a KISS tnc.
>
>   As for AEA tnc's, I learned 6 years ago to use ANYTHING else. But I

```
> do know that unless the PK-96 is a tnc-2 clone, forget X1J.

Karl:

I'm running 3 BPQ nodes connected to each other in my house via RS-232.
The central computer has one port going to one node, and the other port
going to the other node.  All three are configured as NETROM ports.  I have
often wondered about running KISS between them, to see if it helped a minor
problem.  I've never run KISS on anything.  Can you tell me what parms are
used in the config.txt file, and whether you have to declare a tnc port or
not?  Using NETROM configuration, you don't declare a TNC.  Do you know if
KISS would work well for this, or would I be better off sticking with
NETROM config, which has worked well for several years?
  __              _   __  __
 / _ _ _    __   /_| / _ /  )/| )
(__)(// (/      (  |(__)(__// |/
        /
mcduffie@hannibal.wncc.cc.ne.us
```

42. Re: [NETSIG:2280] Re: PK-96 X1J node

```
From: Robert Donnell <rdonnell@eskimo.com>
Date: Sun, 17 Dec 1995 21:07:57 -0800
To: netsig@tapr.org
Message-ID: <199512180508.VAA11947@mail.eskimo.com>
Rendered body type: text/plain
```

```
At 06:17 AM 12/16/95 -0600, you wrote:
>
>        As for AEA tnc's, I learned 6 years ago to use ANYTHING else. But I
>do know that unless the PK-96 is a tnc-2 clone, forget X1J.
>

6 years ago, AEA didn't have KISS all figured out - about 5.5 years ago they
got it right, with a little help from yours truely.  I've got two PK-232's
here (both with TAPR modems installed) running KISS 24 hours a day, and I
can't remember the last time I had any sort of trouble related to KISS with
them.  The nine-year old PK-232 has been in KISS over half of it's life!

Also, it seems that I remember seeing mention that X1J had been modified to
work on the PK-96 hardware.

I just wish I'd had input early enough to convince the president of AEA to
make it a dual-port-simultanious model - virtually all that's needed is
another DCD state machine and software support for the second port on the
Z8530 - it's not used!

'nuf said...

73, Bob  (ex-AEA tech support)


-----------------------------------------------------------------------
  Bob Donnell, KD7NM       bob@kd7nm.ampr.org    rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
-----------------------------------------------------------------------
```

43. Re: [NETSIG:2282] Re: PK-96 X1J node

```
From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Mon, 18 Dec 1995 15:09:19 -0700
To: netsig@tapr.org
Message-ID: <199512182209.PAA08680@acca.nmsu.edu>
Rendered body type: text/plain
```

```
>Even though the PK-96 isn't TNC2 compatable, a special version of
>X1J4 has been written specifically for the PK-96. It lacks the
>capability to run the deviation meter, sig strength meter, ect, but
>has all the regular X1J node functions.
>
>73 DE Charles N5PVL @ N5PVL.#NTX.TX.USA.NOAM
>
>If it works, don't fix it.
>
        Charles, this is great information! Please pass along where other
PK-96 owners can get the X1J software for it. I would like to get it and
have it for that time a guy comes to me (since I have a e-prom burner) and
wants a chip for his PK-96. What CPU does it use?

Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->
```

44. Re: [NETSIG:2286] Re: PK-96 X1J node

From: "Tom Moulton" <tmoulton@ram.net>
Date: Tue, 19 Dec 95 15:58:43 EST
To: netsig@tapr.org
Message-ID: <15021573.212f@ram.net>
Rendered body type: text/plain

I would be interested in the differences so I could port ROSE to it as well.

(Karl, it is Z80 based)

How is the 96 different from the 87/88?

****
Thomas A. Moulton, W2VY
w2vy@ram.net

45. Re: [NETSIG:2286] Re: PK-96 X1J node

From: Sid Ashen-Brenner <sashen@midusa.net>
Date: Tue, 19 Dec 1995 18:45:57 -0600
To: netsig@tapr.org
Message-ID: <199512200045.SAA25462@services.midusa.net>
Rendered body type: text/plain

At 12:50 PM 12/19/95 -0600, you wrote:
>
>>Even though the PK-96 isn't TNC2 compatable, a special version of
>>X1J4 has been written specifically for the PK-96. It lacks the
>>capability to run the deviation meter, sig strength meter, ect, but
>>has all the regular X1J node functions.
>>
>
>   Charles, this is great information! Please pass along where other
>PK-96 owners can get the X1J software for it. I would like to get it and
>have it for that time a guy comes to me (since I have a e-prom burner) and
>wants a chip for his PK-96. What CPU does it use?

Um didn't I see this file on the TAPR file server? I think so, in the
software section somewhere.

- -
Sid Ashen-Brenner (n0obm)   Packet: n0obm @ n0obm.#ncks.ks.usa.noam
Salina Regional Health Center   Fidonet: 1:295/6   Salina Packet Systems BBS

Salina, Kansas 67401
                                sashen@midusa.net

46. Re: [NETSIG:2286] Re: PK-96 X1J node

From: Robert Donnell <rdonnell@eskimo.com>
Date: Wed, 20 Dec 1995 05:47:27 -0800
To: netsig@tapr.org
Message-ID: <199512201347.FAA21698@mail.eskimo.com>
Rendered body type: text/plain

What CPU does it use?

A Zilog Z-180, aka Toshiba HD64180. It has built-in bank switching
capability, as well as ability to address (using the bank switching
hardware) 512k of memory. Also has DMA, and two serial ports internally.
Not all used by AEA...

73, Bob

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651
----

47. Re: PK-96 X1J node

From: shawnpat@sierra.net
Date: Wed, 20 Dec 1995 18:10:47 +0000
To: netsig@tapr.org
Message-ID: <199512201817.AA20084@diamond.sierra.net>
Rendered body type: text/plain

>>   Charles, this is great information! Please pass along where other
>>PK-96 owners can get the X1J software for it. I would like to get it and
>>have it for that time a guy comes to me (since I have a e-prom burner) and
>>wants a chip for his PK-96. What CPU does it use?

The PK-96 X1J code was distributed as part of the X1J-4 package.
There were 5 parts to the distribution, which also included the source
code, deviation meter, and signal meter plans.

The 5 files are available on N7MRP's land line BBS, look for X1J4 in the
file names. It was also on the Inet under the ham, packet, or incomming
directories of the 3 sites I found at the time.

ftp://ftp.ucsd.edu/hamradio/packet/tcpip/incomming/ I think,
ftp://oak.oakland.edu/pub3/hamradio/pc/digital/utils/ I believe.

Search around as the directories may have changed since last May.
If you find a 1.2 Meg zip file, that is all five files packaged into one.

73 de Shawn, N7XBM.

48. Re: [NETSIG:2287] Re: PK-96 X1J node

From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Wed, 20 Dec 1995 12:36:42 -0700
To: netsig@tapr.org
Message-ID: <199512201936.MAA08737@acca.nmsu.edu>
Rendered body type: text/plain

At 07:17 AM 12/20/95 -0600, you wrote:
>I would be interested in the differences so I could port ROSE to it as well.
>
>(Karl, it is Z80 based)
>
        Thanks Tom.

>How is the 96 different from the 87/88?
>
>**********
>Thomas A. Moulton, W2VY
>w2vy@ram.net
>
>
        A Merry Christmas to You and Yours Tom,

Karl F. Larsen -------------- k5di@acca.nmsu.edu --------------------------->

49. Re: [NETSIG:2288] Re: PK-96 X1J node

From: "Bob Nielsen" <nielsen@primenet.com>
Date: Wed, 20 Dec 1995 11:31:49 +0700
To: netsig@tapr.org
Message-ID: <199512201832.LAA18884@usr4.primenet.com>
Rendered body type: text/plain

Sid Ashen-Brenner <sashen@midusa.net> wrote:

> At 12:50 PM 12/19/95 -0600, you wrote:
> >
> >>Even though the PK-96 isn't TNC2 compatable, a special version of
> >>X1J4 has been written specifically for the PK-96. It lacks the
> >>capability to run the deviation meter, sig strength meter, ect, but
> >>has all the regular X1J node functions.
> >>
> >
> >   Charles, this is great information! Please pass along where other
> >PK-96 owners can get the X1J software for it. I would like to get it and
> >have it for that time a guy comes to me (since I have a e-prom burner) and
> >wants a chip for his PK-96. What CPU does it use?
>
> Um didn't I see this file on the TAPR file server? I think so, in the
> software section somewhere.

The X1J software was submitted to the TAPR file server, but due to
long-standing concerns about its heritage, has not been placed in the
files. There is a note telling folks to look elsewhere, such as
ftp.ucsd.edu.

Bob

Bob Nielsen   Internet:nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
                                AX.25: w6swe@wb7tls.az.usa.noam

50. PK-96 vs PK-12 TNC's

From: "Charles Brabham" <n5pvl@texoma.com>
Date: Mon, 25 Dec 1995 17:49:33 +0000
To: netsig@tapr.org
Message-ID: <199512252349.RAA26575@mercury.texoma.com>
Rendered body type: text/plain

The PK-96 offers several bells and whistles which set it apart frrom
the PK-12 besides the 9600 modem.. The PK-12 doesn't offer X1J node
capability, or MultiDropped KISS mode for use with BPQ. The PK-96
does offer these... Also, the manual for the PK-96 is much nicer.

73 DE Charles N5PVL @ N5PVL.#NTX.TX.USA.NOAM

If it works, don't fix it.

---

51. Re: [NETSIG:2293] PK-96 vs PK-12 TNC's

From: Robert Donnell <rdonnell@eskimo.com>
Date: Wed, 27 Dec 1995 02:12:04 -0800
To: netsig@tapr.org
Message-ID: <199512271013.CAA15535@mail.eskimo.com>
Rendered body type: text/plain

At 09:52 PM 12/25/95 -0600, you wrote:
> The PK-96 offers several bells and whistles which set it apart frrom
>the PK-12 besides the 9600 modem.. The PK-12 doesn't offer X1J node
>capability, or MultiDropped KISS mode for use with BPQ. The PK-96
>does offer these... Also, the manual for the PK-96 is much nicer.
>

Generally speaking the PK-96 should be a lot more stable box, too.

The PK-12 is a new (now not so new) project with AEA. It uses a processor
from a different family - 68HC11??? - to do the job. Therefore, your
chances of seeing any firmware options besides those from AEA is just about zip.

For those using KISS, since the PK-96 is using the Z180 processor, and AEA's
original programmer had a long track record (over 10 years) with Zilog
processors, as well as a roughly 3 year history with the Z180 (in the
DSP-12/2232), about the only bugs likely to be seen are those introduced
with upgrades.

*** soapbox on ***

Unfortunatly AEA's current management has created an environment where high
turnover exists. I think the collective description from the former
employees' group (of which I'm a member) is 'stress micromangement'.

*** soapbox off ***

Hope everyone had a Merry Christmas, and are looking forward to the New Year.

73, Bob

  Bob Donnell, KD7NM   bob@kd7nm.ampr.org   rdonnell@eskimo.com
  Western Washington Amateur IP Address Coordinator   (206) 775-3651

---

52. Re: [NETSIG:2294] Re: PK-96 vs PK-12 TNC's

From: "Charles Brabham" <n5pvl@texoma.com>
Date: Wed, 27 Dec 1995 19:40:46 +0000
To: netsig@tapr.org
Message-ID: <199512280140.TAA25592@mercury.texoma.com>
Rendered body type: text/plain

>
> Unfortunatly AEA's current management has created an environment where high
> turnover exists. I think the collective description from the former
> employees' group (of which I'm a member) is 'stress micromangement'.
>

Is this anything like "crisis management", where the management
always manages to be in a crisis?

73 DE Charles N5PVL @ N5PVL.#NTX.TX.USA.NOAM

If it works, don't fix it.

53. X1J Nodes

From: Bill Vodall <vodall@bigsky.dillon.mt.us>
Date: Thu, 28 Dec 1995 05:01:00 -0700 (MST)
To: NETSIG TAPR <netsig@tapr.org>
Message-ID: <m0tVH16-0002m3C@mtewe.kevin.mt.us>
Rendered body type: text/plain

There are probably very few that appreciate more what the X1J
nodes are and can do then I.   I love the features and consider
the IP router as one of the three best things to happen to TCP/IP
on the packet network in the past few years.

But....

Tonight, a friend said, "with all this progress, first going to X1J and
now to X1J4 - things keep getting slower. Before we could connect to XXX
and link to XXX and use the converse node. Now we can seldom get
connected."

I think he's right. For IP it seems to work fine. But there is some
weirdness with the original AX25 connections. It will hang for long
quiet pauses. I've been in the middle of forwarding bulletins (AX25
style, not IP) on a fairly clean circuit when the X1J node just goes
and disconnects me.

Maybe it's not configured correctly. Maybe it's just asking too much
of a old system (4 MHz Z80) on a busy channel. After watching (for far
too much time) two networks run here I've seen many examples of the
pauses and node instigated disconnects. It's a fairly general observation
of folks I talk to that it does run slower. Most of our configuration
is based on default values.

Am I(we) seeing things?   Is there possibly a glitch. Or a processor
load problem?   If it's not too much for the list, I'd like to post a
2 page (abt 120 lines) working document of our node configuration for the
opinion of the members.

73 - Bill

--

Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
Reply-To: vodall@bigsky.dillon.mt.us
Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam

54. 9600 Baud with FT 5100 ???

From: Pascal MONTAIGNE <Pascal.MONTAIGNE@FMS.HOST.ORG>
Date: Thu, 28 Dec 1995 20:53:49 +-100
To: "'NetSIG'" <NetSIG@tapr.org>
Message-ID: <01BAD566.9CAA58E0@du.fms.host.org>
Rendered body type: text/plain

Can you send me the mods to get the UHF part of the FT5100 to run at 9600?
I got the receive part running but the transmit part seen to lack of high frequencies.

73, Pascal, f5poe

55. Re: [NETSIG:2296] X1J Nodes

From: Bob Merritt <bobm@mindspring.com>
Date: Thu, 28 Dec 1995 17:33:37 -0500
To: netsig@tapr.org
Message-ID: <199512282235.RAA20442@borg.mindspring.com>
Rendered body type: text/plain

At 12:37 PM 12/28/95 -0600, you wrote:
>
>of a old system (4 MHz Z80) on a busy channel. After watching (for far
>too much time) two networks run here I've seen many examples of the
>pauses and node instigated disconnects.

We ran X1G, H and J for some time here locally, before switching to JNOS
running on PC's at our sites...

Anyway, CPU loading on busy channel is the culprit IMHO...
Prior to going to PC's, I had to put 10 Mhz upgrade kits into our MFJ's
running X1J to keep up with the traffic... I picked up the kits from PacComm.

73/Bob ka4byp

```
-----
Bob Merritt KA4BYP           "Wide World of Packet Radio"
1004 South McDonough Rd      http://www.mindspring.com/~bobm
Griffin, GA   30223
```

56. Re: [NETSIG:2296] X1J Nodes

```
From: "Karl F. Larsen" <k5di@acca.nmsu.edu>
Date: Fri, 29 Dec 1995 06:34:50 -0700
To: netsig@tapr.org
Message-ID: <199512291334.GAA06326@acca.nmsu.edu>
Rendered body type: text/plain
```

At 12:37 PM 12/28/95 -0600, you wrote:
>
>There are probably very few that appreciate more what the X1J
>nodes are and can do then I.   I love the features and consider
>the IP router as one of the three best things to happen to TCP/IP
>on the packet network in the past few years.
>

Me too. The IP router is a great idea. Months ago I ran a test. Sent a large FTP file to a guy using the ax25 mode through a x1j4 node. Then re-configured for a netrom path and sent the same file. The ax.25 path was almost twice as fast as the netrom....

>But....
>
>Tonight, a friend said, "with all this progress, first going to X1J and
>now to X1J4 - things keep getting slower. Before we could connect to XXX
>and link to XXX and use the converse node. Now we can seldom get
>connected."
>
>I think he's right. For IP it seems to work fine. But there is some
>weirdness with the original AX25 connections. It will hang for long
>quiet pauses. I've been in the middle of forwarding bulletins (AX25
>style, not IP) on a fairly clean circuit when the X1J node just goes
>and disconnects me.
>
>Maybe it's not configured correctly. Maybe it's just asking too much
>of a old system (4 MHz Z80) on a busy channel. After watching (for far
>too much time) two networks run here I've seen many examples of the
>pauses and node instigated disconnects. It's a fairly general observation
>of folks I talk to that it does run slower. Most of our configuration
>is based on default values.

Be careful Bill. When a node gets slow it can be a CPU service problem, but at 1200 baud, divided by the number nodes, the Z-80 is loafing along. What you are seeing is the effects of "Hidden Transmitters". I will bet that in Montana you have nodes on high peaks. We have them down here in NM. I have a couple of nodes and must drive to them to repair things. I turn on my mobile on 145.01 and in this area 145.07 and just monitor. From the mountain I here almost constant bursts of activity, worst during weekends, when guys get on.

>
>Am I(we) seeing things?   Is there possibly a glitch. Or a processor
>load problem?   If it's not too much for the list, I'd like to post a
>2 page (abt 120 lines) working document of our node configuration for the
>opinion of the members.

Don't bother Bill. I have a x1j4 node in the hamshack. If your worried send it to me and I will load it into a tnc and see how it runs, after a file compare.

>
>73 - Bill
>
>--
>
>Bill Vodall Box 75 Kevin, Mt 59454 1-406-337-2222
>Reply-To: vodall@bigsky.dillon.mt.us
>Amateur Packet: wa7nwp@wa7nwp.#ncmt.mt.usa.noam
>

Karl F. Larsen ---- k5di@acca.nmsu.edu --- http://rever.nmsu.edu/~k5di/ -->

57. Re: [NETSIG:2296] X1J Nodes

From: Sean Smithers <seans@magick.net>
Date: Fri, 29 Dec 1995 08:37:21 -48000
To: netsig@tapr.org
Cc: netsig@tapr.org
Message-ID: <Pine.3.89.9512290827.A19360-0100000@gp.magick.net>
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I can't really help with setups at this moment, but our packet group
SOAPRA just finished updating all our backbone nodestacks to X-1J4 from
TheNet. We have noticed faster response and reliability with the upgrade.
Of course we have no experience with X-1J so I can't tell you if this
code is slower. Just letting you know our experiences with it at this time.

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Sean Smithers
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CompuServe: 70132,136
Packet: N7ZWU @ WB7VMS.#MURPH.OR.USA.NOAM

On Thu, 28 Dec 1995, Bill Vodall wrote:

>
> But....
>
> Tonight, a friend said, "with all this progress, first going to X1J and
> now to X1J4 - things keep getting slower. Before we could connect to XXX
> and link to XXX and use the converse node. Now we can seldom get
> connected."
>
>
> Maybe it's not configured correctly. Maybe it's just asking too much
> of a old system (4 MHz Z80) on a busy channel. After watching (for far
> too much time) two networks run here I've seen many examples of the
> pauses and node instigated disconnects. It's a fairly general observation
> of folks I talk to that it does run slower. Most of our configuration
> is based on default values.
>
>

58. New NetSIG Moderator/Chairperson

From: jra@ag9v.ampr.org
Date: Sun, 31 Dec 1995 10:30:46 -0500 (EST)
To: netsig@tapr.org
Cc: gjones@tenet.edu (Greg Jones)
Message-ID: <199512311530.KAA08691@ag9v.ampr.org>
Rendered body type: text/plain

I'm pleased to announce that Steve Stroh, N8GNJ (strohs@halcyon.com), is
the new NetSIG moderator and chairperson.

Though I've cleverly timed this announcement for the new year, Steve has
actually been doing the job for a couple of months, and doing it very well.

Steve is very active in both network building and tcp/ip in the Seattle area,
and he's been a great contributor to NetSIG.

There are a couple of reasons for this change. Primarily, I have too many
other projects for TAPR and my local group (not to mention my family and
employer!) to give NetSIG the time it needs. But I think there's also value
in change; NetSIG is going on two years old and it could use new ideas and
perspectives to keep it lively. I'll be remaining on as backup to Steve.

Please join me in welcoming Steve to his new role.

73,
John
--
John Ackermann   AG9V
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